

THE DENTAL DIGEST

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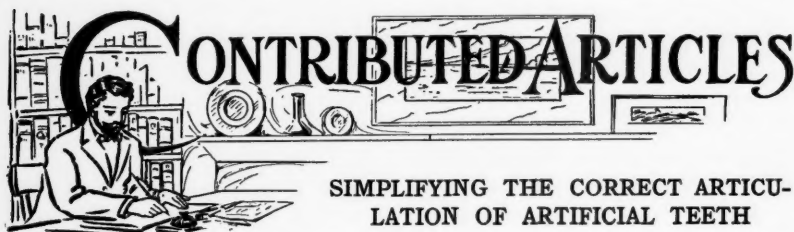
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BY ALFRED GYSI, D.D.S., ZURICH, SWITZERLAND

Professor at The Dental School of The University of Zurich

(LITERARY COLLABORATION BY GEORGE WOOD CLAPP, D.D.S.)

FIRST PAPER

For nearly three years, I have had the pleasure of studying under Professor Gysi, and, now that the fruit of his labors is drawing to a practical head, I am happy to have the pleasure of affording him literary collaboration in the presentation of those labors to English speaking dentists. Professor Gysi speaks and writes German, French, and English, but he feels that perhaps one who is born to the English tongue can aid him in presenting these subjects to the profession.

This is the first of a series of articles. It is purposely designed to give a general survey of one part of the field before entering on any discussion of details. The next two articles discuss in greater detail the matters which are here given general attention.—THE EDITOR.

SINCE the appearance of the articles in *The Dental Cosmos*, in which I described my methods of articulating artificial dentures and the articulator which I designed for applying those methods, I am in almost daily receipt of letters from members of the dental profession.

Many of the writers show keen interest and understanding, but there has been, almost from the first, a feeling that some of the methods were too time-consuming for the average dentist, and that the apparatus was too complicated and expensive.

Feeling that there was some truth in these statements, I immediately set about devising an articulator whereby all the "trouble," as some writers called it, could be avoided, and yet have the articulation in accordance with the fundamental scientific laws. I felt the need of a simple articulator which was scientifically accurate.

Just when success seemed to be crowning my efforts at simplification, Norman G. Bennett discovered and charted the lateral movements of the condyles. My assistants and I gave two weeks of daily work to the confirmation of Bennett's experiments and to supporting experiments of our own. And when we were through, I knew that the new articulator, and all other articulators which are to be correct, must provide for these lateral movements of the condyles. This discovery proved to be a blessing in disguise, for it led to the perfection of new and greatly improved forms of artificial glenoid fossa and condyle, and much more scientific articulation between them. When this new form of joint is understood it is sure to commend itself as scientific, rational, and satisfactory.

The new articulator, to which I have given the name, the Gysi Simplex, is scarcely more complicated than the old forms of hinge articulators, yet it meets the principal scientific requirements. It is necessarily constructed "on the law of averages," and requires the user to regard each case as normal. You cannot have an adaptable articulator unless you are willing to make adaptations. And you cannot make adaptations intelligently unless you are willing to measure the individual movements of the mandible being fitted, and adapt the articulator to reproduce them. This is the method I always follow and teach.

The Gysi Simplex Articulator is adjusted to reproduce the movements of the average patient; that is, the average movements as taken from my extensive records of carefully recorded mandibular movements. The condyle paths exhibit a downward and forward inclination of 33° and a lateral inclination of the condyle paths of 16° . The rotation points are placed at the distance apart given by Bonwill. An Incisor Guide Incline with the most practical upward slant is provided and a pin travels on it. The result of these fixed adaptations is that the artificial mandible in this articulator reproduces more scientifically than in any other simple articulator the average movements of the human mandible.

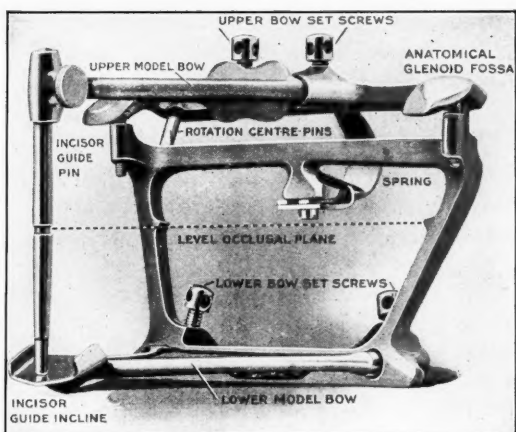


Illustration No. 1.—Front View Gysi Simplex Articulator Closed.

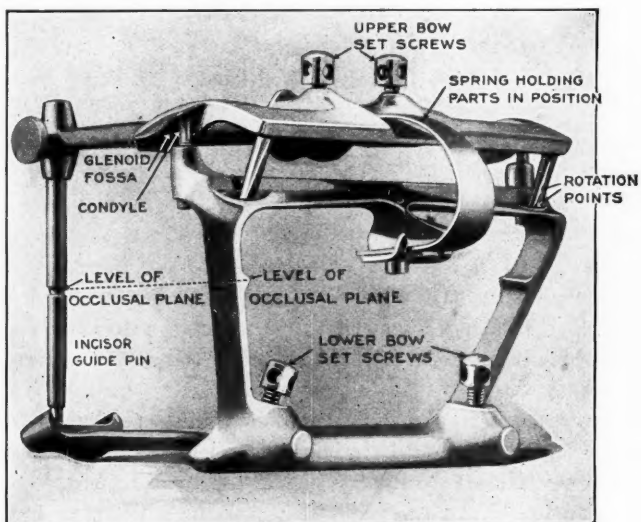


Illustration No. 2.—Rear View Gysi Simplex Articulator Closed.

The characteristics of this articulator will be described more fully in future articles. A brief statement of them is as follows:

Properly placed rotation points. The importance of these points, when considered in connection with a form of condyle and fossa which permits their proper functioning, cannot be overstated. Bennett's work was revolutionary. It forever took from the condyles their function of rotating points on which the mandible turns in its several movements. It demonstrated that the artificial mandible cannot perform its proper movements so long as it is represented by a horizontal pin working in a slot.

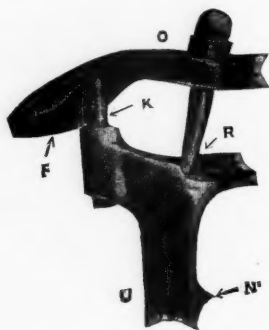


Illustration No. 3.—Sectional View of One Rotation Point, R; supporting the upper and movable part of the frame, O. The Rotation Point on each side is located horizontally back of the condyle, K, and vertically half way between the head of the condyle and the level of the occlusal plane, N.

F is the Glenoid Fossa which is of the proper anatomical form and inclination.

My own labors have been to extend Bennett's discoveries, in a way of which I shall tell you later, and to devise a form of fossa and condyle which permits the artificial mandible to perform correct movements.

The proper location of the rotation points permits us to raise and lower the bite without disturbing the articulation of the upper and lower pieces. Unless the rotation points are correctly located, raising or lowering the bites unavoidably deranges the articulation in a way which is particularly exasperating and hard to correct. More of this also, later.

A new and advantageous form of fossa and condyle. As will be seen, when we come to the more detailed study of the movements of

the mandible, proper lateral movements were quite impossible with the form of condyle and fossa in common use. Moreover, that form of fossa made the condyles unavoidably the rotation points of the mandible.

You may be sure that the problem of devising a more scientific fossa and condyle gave me no small amount of labor. But when I got close back to Nature, I found the method. I made a fossa which is, in all important respects, like that on the skull, and a condyle which, for all artificial purposes, is like the human condyle. And then, having properly located rotation points and an Incisor Guide Pin in front, the problem was solved.

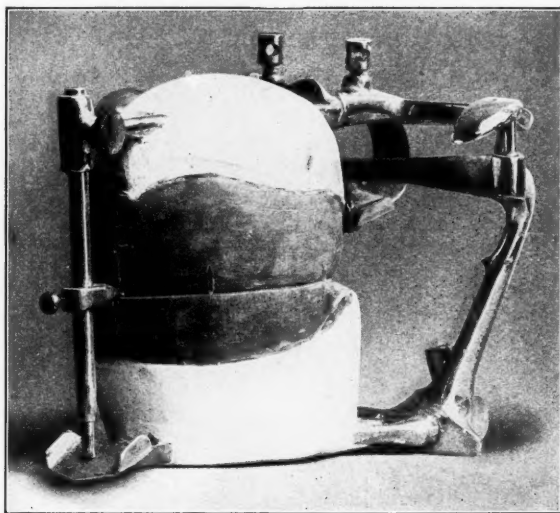


Illustration No. 4.—Models Mounted by Means of the Incisor Guide.

The gist of the new fossa and condyle is that they permit more natural movements of the artificial mandible than any others.

An Incisor Guide Incline and Pin. The natural mandible is below the upper jaw. And it tends to fall away from the upper jaw unless supported. And when the jaws come together in other than the straight open and shut movements, they are guided into occlusion by the slopes of the upper anterior teeth and the cusps of the posteriors. In lateral movements of the natural mandible, these slopes of the upper teeth guide the lower teeth.

In an articulator, the mandible is the upper jaw. It does not

drop away from the lower, but falls upon it. Until the teeth are in position to control the relations of these artificial jaws, it is necessary to the maintenance of correct relations that some anterior support shall guide the upper jaw. This can best be accomplished by placing on the anterior part of the lower model bow an incline representing the guiding portions of the upper teeth, and letting it guide the upper model bow through a pin.

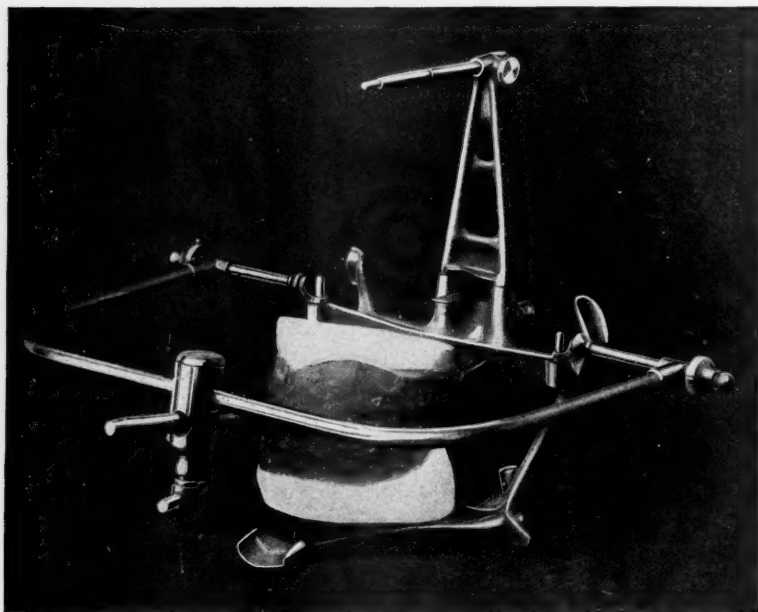


Illustration No. 5.—Trial Plates Mounted on Articulator with Face Bow.

MANIPULATION OF THE SIMPLEX ARTICULATOR

The manipulation of this articulator is simple in the extreme, and I feel that in offering it I have fully complied with the requests of my professional brethren.

The models may be mounted by the use of the Snow Face Bow or by the application of Bonwill's measurements. If the Snow Face Bow is used, the Snow Face Bow Adapters should be slipped over the condyles. The Upper Model Bow and Incisor Guide Pin are lifted, the Face Bow is engaged with the projecting ends of the adapters, enough

soft plaster is poured over the Lower Model Bow to support the model, and the Face Bow and models are moved downward until the mouth-piece of the Face Bow is parallel with the Lower Model Bow of the articulator, or with the top of the bench if the articulator sits flat. When the plaster is hard, the Face Bow and mouth-piece are removed, soft plaster poured on the upper model, and the Upper Model Bow moved down until the Incisor Guide Pin prevents further descent.

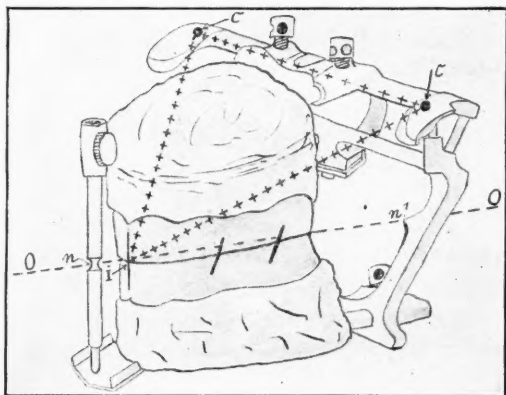


Illustration No. 6.—If the models be so mounted that the distance to the median line of the trial plates, at the occlusal plane, equals the distance between the depressions on the horizontal plates over the fossae, they will conform to Dr. Bonwill's measurements. The line O-O from the center of the depression in the Incisor Guide Pin to the projection N' on the inner side of the frame represents the proper level of the occlusal plane.

If Bonwill's measurements are to be used, the mounting is even more simple. On the Incisor Guide Pin will be found a little pointed block, which I have called the Incisor Guide. If this is placed with the set screw in the depression of the Incisor Guide Pin and is pointed straight back, it locates the median line of the upper trial plate at the incisal edge. The proper level of the occlusal plane is from the tip of the Incisor Guide to the tips of the projections on the inner sides of the articulator frame.

If a Gysi Condyle Path Register is used for mounting the models, the procedure is practically the same as with the Snow Face Bow, except that the Face Bow Adapters are unnecessary. The inner ends of the pencils which registered the paths of the condyles are placed opposite the heads of the artificial condyles and the models attached with the Register in that position.

The trial plates may now be separated and the articulation of the teeth carried on in the usual manner.

I cannot close this preliminary statement without a word on the articulation of crowns and bridges. It is quite possible that the principles of correct articulation are less intelligently applied to the articulation of crowns and bridges than to dentures. In order that a bridge be properly made, full models of both jaws should be made, and they should be mounted in the articulator as if for full dentures. The cuspal forms and relations should then be determined by the movements of the mandible. If the articulator reproduce these movements properly and the cusps are rightly shaped, the piece will be much more correctly shaped than is otherwise possible. It will sustain fewer unsuspected lateral strains and will prove both more efficient and more durable.

The Gysi Simplex Articulator will not satisfy the requirements of dentists who desire to meet in the best possible manner the requirements of each case. It is not intended for such workers. For such dentists I have recently perfected an articulator which embodies the correct scientific principles with the possibilities of adapting each inclination of the condyle paths so that the movements of any mandible may be very closely reproduced. I have named that articulator The Gysi Adaptable because it permits adapting the location of the rotation points and the inclinations of the condyle paths as required. I expect to write about it later.

In closing, permit me to say that I believe the problem of articulation is now solved so far as the construction of scientific articulators is concerned. I believe every movement of the human mandible is known, and its effects on the functioning of the teeth. The future may extend our knowledge of these movements in minute details, but it is unlikely to produce anything revolutionary. The problems are now those concerned with the application of known facts.

(Dr. Gysi's second paper is expected to appear in the February number.)

TO REMOVE METAL PIN FROM CROWN WHEN BROKEN.—It often happens that the pin of a Davis, 20th century or other base metal pin is broken off in the crown at the point where the pin enters the root canal. To get this portion of the pin out of the crown, throw it into nitric acid (full strength, commercial) and in a few hours the pin will be entirely dissolved and crown uninjured.—G. W. BLAESSER, D.D.S.

ORTHODONTIA OF THE DECIDUOUS TEETH*

By E. A. BOGUE, M.D., D.D.S., NEW YORK CITY, N. Y.

Fourth Paper

It has already been stated that irregularities of the deciduous teeth are the results of weakness. If the circle of the causes and results of this weakness could be made plain to all practitioners, so that we should recognize the earliest manifestations of deficiency and should set about the location and correction of the perverted functions, we should confer on many of our patients much greater benefits than we commonly do.

I believe the early detection of such physical deficiencies to be one of the greatest privileges conferred on the dentist. I believe also that the correction of these deficiencies during "the shaping period of childhood," which ends with the age of six or seven years, offers our greatest opportunity for real professional service. Surely we may risk a little repetition for the sake of fixing in our minds the possibilities of such service.

Probably the average child is born fit. But the early catching of colds, habits of uncleanness in the baby mouth, wrong habits of feeding, or vicious habits begun by the child itself, soon lead to perverted functions. There is little doubt in my own mind that the perversion of function first occurs in connection with breathing. The air passage through the nose is reduced in size by the enlargement of adenoids or tonsils or catarrhal conditions of the nasal membranes. The mouth is then commonly held open for breathing. The functions of the cheeks and tongue, which normally give shape to the dental arches, are perverted, and the arches are either actually pushed out of form or proper development is prevented. Irregularities of the temporary teeth result. Unless Nature works a miracle, or the dentist intervenes before the eruption of the permanent teeth, irregularities of the permanent teeth are unavoidable.

Let us get that vicious circle plainly in mind. It begins, we will suppose, with some interruption of the nasal breathing space. It necessitates holding the mouth open. It results in malformation of the arches and malpositions of the teeth. The influence of these perverted functions is to reduce the normal vital force and frequently materially to retard development of the whole body. In many cases the restoration of normal bodily vigor and renewal of development requires only the

* These articles were commenced in the October issue.

correction of the perverted functions and their evil effects in the nose and mouth. Let it be emphasized here, in the strongest manner, that the value of such intervention is almost directly related to the promptness with which it is undertaken. Experience has shown that after the age of six or seven, such intervention is less beneficial than it is between the age of three and a half and six years.

The effects of the vicious circle mentioned above are not limited to the deficiencies merely outlined here. They affect every part of the body. Not only will the child often be undersized, but he will generally lack the muscular development and stamina with which Nature endows the healthy child. The enamel covering of the permanent teeth will often be defective from sheer lack of strength on the part of Nature to complete it, giving rise to dental decay later on. The eruption of the permanent teeth is often delayed because of insufficient bodily vigor to erupt them. Another source of weakness in development is the soft food upon which the child just being weaned is often fed. The little child just getting its first teeth, craves something on which to exercise them, while the parent or nurse rarely gives it. A hard bit of crust or buttered toast, or even a chop bone to gnaw, is far better than bread soaked in milk or other semi-fluid food that can be swallowed almost without mastication. So far-reaching are the effects of the perverted functions mentioned, that nearly all the children whose dental irregularities have not been corrected before the age of seven years, and who have remained afflicted with marked irregularities of the teeth and a high palatal vault, will be found to exhibit stooping shoulders, curvature of the spine, sternum and ribs, and consequent reduction in size of the thoracic cavity. Children so afflicted are less well fitted to survive.

Dr. Frank Matthews has kindly procured for me a number of photographs, of which I present the most interesting case herewith.

So momentous are these facts to us as guardians of the public health, and to those whom we serve, that I want to print here a valuable paper furnished to me by a practitioner of medicine, Dr. Douglass H. Stewart of New York. For the sake of harmony with dental terms, I have changed one word of Dr. Stewart's throughout the paper, for where he wrote "arch" he meant what we mean by the term "vault"; that is, the hard roof of the mouth and floor of the nose. The essential parts of Dr. Stewart's paper are as follows:

A HIGH-VAULT AND THE EVERY-DAY PRACTITIONER

High palatal vaults are only too common—but the man who has learned the lesson they teach is rare. I propose to call the attention of



Olga W., German, born in United States, aged 13 years. Two or three years behind other children of her age. Reads in Third Reader. Tonsils and adenoids removed in a dispensary some years ago. Always been a mouth-breather. Nasal septum not deviated; narrow face, prominent nose; narrow, high arch, fairly wide lower. An open bite with the occlusion of only first and second molars above and below. Right lower first molar (permanent) has been removed and place taken by second molar. April 19, 1912—Left tonsillectomy and removal of small adenoid mass.



X-ray of Distorted Jaw. Olga W. (By permission of Dr. Frank Matthews.)

the medical brotherhood to a simple guide post in one of the almost trackless paths which lead to the plain highway of complete and accurate diagnosis.

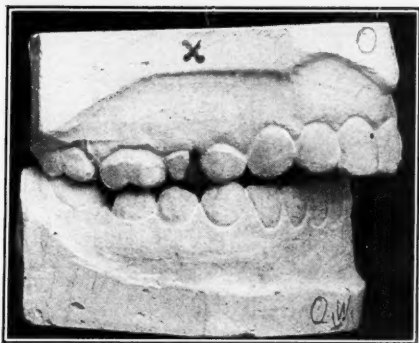
Narrow my remarks to patients between the ages of four and eight years of age, and the same patients thirty years later. In the former you see the symptoms and damage in process of development, and at a time when a small amount of prevention is golden in its good effects. In the latter the damage is permanent; prevention is hopeless.

Let us suppose that a mother consults you regarding her child. Perhaps the child has adenoids. But look at every child's palatal vault. The first question for you to solve is whether the curve of that vault is normal. If you make up your mind that the adenoid condition is the complete whole, you must be prepared for endless crops of adenoids. And it really will not advance your reputation if you remove these adenoids and six months or a year later there are so many more adenoids that the child's condition is perhaps worse than before. Look at every vault, even if you do not think it necessary.

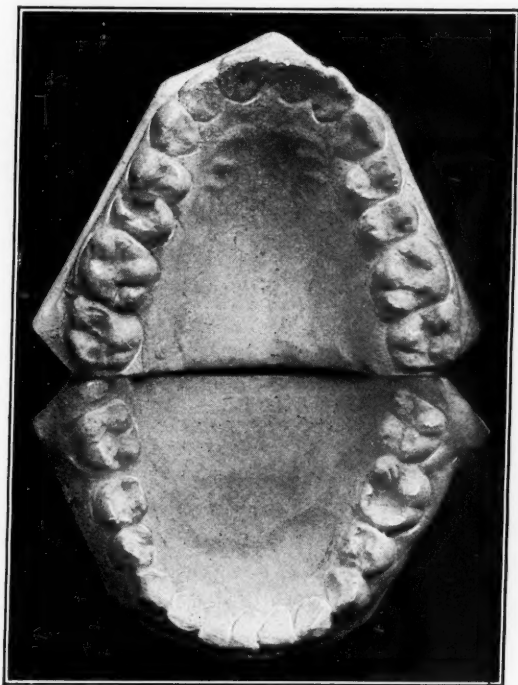
If you think the vault is high, remember that it forms the floor of the nose, and search upstairs. If you find a bent septum or distorted or unequal nostrils, don't prepare to dig anything out. With a high palatal vault, structures in the nose are displaced, but they are not abnormal. Then place a straight edge along the middle of the sternum, from the notch at the neck to the notch at the ensiform, and note how much the breast bone is distorted. Do the same by the spinal column. Pass your straight edge over the thorax. This will make plain to you that there are various dents and inequalities caused by unbalanced, external air pressure, against a partial vacuum internally.

Causing the child to take a deep breath with the mouth closed will cause these depressions to sink in during inspiration. If they do not sink in during mouth breathing, it will mean that the throat is free and the nasal intake alone is at fault. If they sink during mouth breathing, then distorted nostril, adenoids, and tonsillar obstructions will all be factors.

I might tell the story of these consequences and their cure more accurately, but I could not put it more graphically than a physician's wife did recently, when writing of her own child. "The poor little thing has had Eye-itis, Nose-itis, Pharyng-itis, Aden-itis, Throat-itis, Tonsil-itis, Bronchitis, Pnenmonitis, Rachitis, and every kind of -itis except grub-itis, and they tell me to await Tubereul-itis, or is it -osis? We have had the adenoids removed two or three times, and now they advise removal of the bones of the nose. We have had a dentist look at her mouth, and he says you are a plumb idiot—that the occlusion of her



Model Closed. Olga W.
(By permission of Dr. Frank Matthews.)



Model Opened. Olga W. Shows a High Vault.
(By permission of Dr. Frank Matthews.)

teeth is perfect, and that no apparatus can be fastened on temporary teeth anyway; that the child has what is called the 'Singer's Arch.' Well, I found a dentist who widened the arch. The child's gain in weight for the past year has been two pounds per month. In order not to cloud the issue, the adenoids were not molested and no medicine was prescribed. The mother writes that the child's energy is now so tremendous that she has taken to tree climbing and has thrashed every boy who teased her. She adds that the original dentist might have forgiven me if only I had been wrong in some detail, but that as matters stand, he probably never will.

A human body with a very high vault may be compared to a beautiful locomotive with a small firebox and poor draught.

63 WEST FORTY-EIGHTH STREET.

(This article is expected to be continued in the February number).

A METHOD OF MAKING YOUR OWN PLATE STRENGTHENERS AND STAPLES TO HOLD SAME IN PLACE.—Take a piece of twenty-two gauge brass wire, such as is sold at hardware stores (about 35 feet for 10 cents), bend like a hairpin, hold ends with fingers of each hand and twist.

Then use two pair of flat-nosed pliers and twist again until wire slips from pliers or starts to bend upon itself. After this procedure you will not be able to tell whether wire was twisted or cast. You will have a very tough but pliable piece of wire, which is easily adjusted to plaster cast, or model, and held in place by staples.

TO MAKE STAPLES, use a brass pin about an inch long, take round-nosed pliers and bend pin at right angles about one third from point, then use extreme end of pliers, or fine point of same, and bend pin, again making J-shaped; cut head off of pin and file to point.

You will get a good strong staple, according to thickness of pin.

I have used these staples and wire with success for the last three years. Have used staples to hold clasp in place where clasp has broken away from tooth on plaster model in flask before packing and vulcanizing case successfully.—LOUIS ENGLANDER, D.D.S., PHILADELPHIA, PA.



OBTUNDING TEETH BY HIGH PRESSURE

BY RAYMOND E. INGALLS, Dental Surgeon, U.S.A.,
VANCOUVER BARRACKS, WASH.

IN my practice, I would no more think of sending a bur into sensitive dentine than I would contemplate slapping the patient's face.

This introductory assertion is made regardless of the sage smile it may bring to the lips of a few eminent men of our profession, who have condemned the use of the high-pressure syringe; but I am positive that a prolonged and impartial trial will convince even the most biased as to its practicability.

Certainly, it would be ludicrous for me to claim any originality or inventive qualifications in any way whatever in connection with this wonderful pain-eliminating instrument, or to claim any originality in the technique to follow. I am merely one of its few enthusiastic beneficiaries trying to impart a few practical ideas that may be appreciated and prove of didactic significance to those interested. You will observe that I frequently make use of the first person. It may convey an impression of attempted dogmatism, and even apparent arrogance; this is, however, far from the intention. A confirmed hobbyist is, instead, solicitously trying to convey in writing his practical experiences on his pet subject—painless dentistry.

Doubtless, the results obtained are more dependent upon the operator than upon any of the syringes at present upon the market. I am convinced that all dentists who are successfully using an instrument of this kind to-day, found that it was necessary to use it in many cases before acquiring confidence of positive results; but once any dentist has perfected himself in its use—and it requires no half-hearted attempts—he will be delighted even more than the patient.

The principle, of course, is to force, by means of high pressure, an anesthetic between the enamel rods and through the dentinal tubules into the pulp—not necessarily into the pulp for very small cavities.

I have tried practically all the anesthetics in various strength solutions, and have concluded that a two-per-cent., aqueous solution of cocaine hydrochloride accomplishes the best results. This seems to desensitize as thoroughly as an increased percentage of cocaine, and with less danger of protoplasmic poisoning. Other anesthetics are, apparently, not as readily carried through the tooth structure.

The first indispensable requisite to bring success in high-pressure anesthesia is an infallible determination that your syringe will serve a long period of humane usefulness, rather than be prematurely dis-

carded to the scrap drawer—that is, start with a resolution to be master of that one big bugaboo in dentistry—pain.

It is essential that this class of syringe have the packing absolutely tight, as any leaks would cause less penetrating power. The care of the needle is of paramount importance. I find it necessary to "nurse" the needle point as the barber does his razor. The end of the point is cut at right angles to the long axis of the needle, and should be kept a perfect angle with square edges. After use, in two or three cases, the edges will wear and become slightly rounded. I then mount a cuttlefish disk on a mandrel, and, holding it perfectly flat over the end, dress it down so that the edges will become well defined. Never touch a disk or stone to the sides of the point; for it must be perfectly cylindrical, and the manufacturer can accomplish that end better than the dentist.

The next step is an explanation to the patient that you wish to cocaine the tooth to prevent pain in the operation; that otherwise the cutting would be painful. To flash the nickeled silver instrument in a neurasthenic's face without any preliminary warning would be apt to instigate a scream for help or a hurry call for an ambulance; therefore, explain to the patient the purpose and method of using the syringe, and give assurance that there will be no pain during the cocainizing process while cutting the tooth, or any noticeable after effects.

I will give the method that I employ to anesthetize a tooth, beginning with one of the simplest cavities—yet one of those cavities that make the patient eringe with the excruciating pain, when the carious dentine is excavated, and make the dentist wish he was a farmer or a preacher—a gingival cavity. How many have seen a recurrence of decay at the margins of fillings inserted in cavities of this class? If the filling is some of your own work, you may inform the patient that the tooth is too "soft" for gold or amalgam; but, down in your heart you know that the cavity was not properly prepared—not enough extension through the infected area. It may be due to your carelessness; but, ten to one, it was caused by the patient's objection to the pain inflicted and your feeling of commiseration for the sufferer. It is entirely unnecessary to apply the rubber dam; for it is most unpleasant to the patient, and a little leak of the anesthetic in the mouth will do no damage.

If the cavity is not hypersensitive, I try to inject through the soft decay by placing the needle directly into it and applying pressure. It is not difficult, ordinarily, to get a tight contact without resorting to the bur. Hold under pressure for twenty seconds, then with a No. 2 round bur, drill slowly to sound dentine. Watch for any

indications of pain while drilling. If at all sensitive, repeat the pressure through the pit made by the bur as many times as necessary. When sound dentine is reached, use high pressure until the tooth is entirely cocaineized, then immediately begin the cavity preparation. Some operators prefer to wait three or four minutes to give the blood stream sufficient time to carry the anesthetic farther into the pulp; but I am satisfied that five seconds of high pressure accomplishes the same results as would five minutes of waiting. Also, others object to cocaineizing through carious cavities for fear infectious matter may be carried into the pulp; however, as I have experienced no trouble in cases of this kind, this evidence to the contrary is, to me, conclusive.

In the case of a hypersensitive cervical cavity, where a mere unkind thought will produce all symptoms of pitchforking the nerve, take a No. 2 round bur, and make a pit in the enamel at the junction of the healthy and infected tooth tissue to form a miniature hemisphere—that is, drill to one half the depth of the bur's head. Do not go through the enamel—that would hurt. Now, use high pressure for thirty seconds. There should be no pain, when, at this stage, you sink the bur into the dentine. Enlarge the pit with a No. 4 round bur, and deepen to a third the depth of the dentine. Drill a No. 2 round bur hemisphere in the bottom of this enlarged pit. Again apply the syringe. Should the tooth be an upper lateral incisor, or one of the low incisors, allow forty-five seconds; one minute for the upper incisors and cuspids; one and a half minutes should suffice for the lower bicuspids and upper second bicuspids; two minutes for the upper first bicuspids, on account of their two roots; and two and a half minutes for the molars. Do not guess at the time. Undertiming would, of course, defeat the object in view, while an overdose would be as fatal to the pulp as an overdose of strychnine taken internally. There can be no danger of congesting the pulp enough to cause devitalization when the tooth is still sensitive. With a little practice, the seconds may be counted quite accurately. On my cabinet I keep a small clock with a second-hand solely for that purpose. This allows me free rein to talk to the patient or to direct my assistant.

The tooth remains under the influence of the anesthetic for an hour or more, affording ample time for operative procedure. The chances of general cocaine poisoning are extremely remote, as it is estimated that only about one fifth of a drop of the solution actually enters the tooth. It is also estimated that the average pressure applied is about 2,600 pounds per square inch. This statement may sound irrational until you stop to consider that the end of the needle has, indeed, a very small area.

With the exception of the location of the pit, the technique just given applies to all cavities where fillings or inlays are indicated. The results are apt to be more consistent if the pit can be made near the neck of the tooth, and through the enamel into healthy dentine. With few exceptions, I always include the pit in the final cavity preparation. For example: the case being a mesio-proximal cavity in a molar, make the pit at the mesio-linguo-gingival angle or at the mesio-bucco-gingival angle. Some operators may consider this an unnecessary destruction of tooth tissue; but those who are keeping in stride with modern dentistry, and have changed their previous opinions, allowing "extension for prevention" to supersede in daily practice, will only be following the dictates of their conscience. Often the decay involves a surface difficult or impossible of access with the syringe; then, you may utilize a fissure on the morsal surface. The fissure pits, however, will not prove as satisfactory. In a very few inaccessible posterior cavities, it may be necessary to bur a pit not to be included in the finished cavity preparation. The refractory cases, slow of response to the anesthetic, are the teeth with the "curly" dentine or considerable secondary dentine. These will require deeper and larger pits.

If it is desirable to extirpate the pulp of a tooth, so that it may receive a crown or root canal anchorage, give it again as much time for a filling.

Probably the most trying cases we have to contend with are the nearly exposed pulps—not enough exposure to respond to the ordinary method of cocaine-pressure anesthesia, and too painful to excavate for an exposure, while an application of arsenic paste would be almost sure to cause a sleepless night. The patient may or may not be suffering from pulpitis. The procedure can be rendered quite simple by placing a pit in the cavity proper, within a millimeter or two aside from a cornu of the pulp. Use high pressure for two minutes. The pulp may now be painlessly exposed, probably, without repeating the procedure. Should any sensitiveness remain in the root canals, complete the desensitizing by the usual cocaine-pressure anesthesia method.

The syringe is a great boon in grinding a sound tooth to receive a shell crown for a bridge span support. It is not entirely essential to extirpate the pulp, although I usually do so; for, if the abutment is properly ground—enamel removed, and the greater diameter of the abutment made at the cervical—the tooth is apt to become very sore, cocaine or no cocaine.

No doubt the chief cause of discouragement to the beginner in high-pressure obtunding is the difficulty in securing contact. It is desirable to have perfect contact, but not a positive requirement—the time

conceded seems to be more essential than increased pressure. There are several reasons why contact is not secured; the edges of the needle point may be worn to a rounded corner, and in need of the cuttle-fish disk application as heretofore stated; the No. 2 bur may be worn or broken so that it will not form a perfect hemisphere pit; perhaps the hand-piece was not held true, and the pit is imperfectly formed; possibly, the final No. 2 bur pit is drilled deeper than half the bur's head, requiring further use of the No. 4 bur; the barrel of the syringe may be so crowded by the lips, tongue, or some mechanical appliance or instrument in the mouth to prevent tight contact; there may be a leak in the syringe itself.

The inaccessible teeth and those that do not readily succumb to the action of the high-pressure syringe should, indeed, be in a small minority. This method is certainly a time-saver—a few minutes to desensitize, then no limit to the operating speed, the question of pain being out of consideration; obviously, the resultant cavity preparation will be more perfect, as perfect as the operator is skillful.

DENTURES AS SEEN BY A PATIENT

This is part of a bonafide letter from a person whom I do not know, to a friend of mine. I do not question the statements.

I think I know what causes the trouble. What do you think causes it?—EDITOR.

PERHAPS you may recall that I told you I had a very sore mouth, which made my *ivories* very painful. Well, it is now one solid year since I had a new set made, upper and lower (having worn a full set very comfortably for 13 years before—but they got too short and I required longer and larger ones)—and I think I may safely say that I have never known a day when my mouth has not been as sore as a boil in all that time. The doctor leaves it to the dentist to cure, and the dentist leaves it to the doctor. I have had three sets made costing nearly \$100, all with the same result. My mouth being so sore, you can understand what agony it is to bite down on these hard plates, sawing into it like a knife. This agony causes such a flow of saliva that it washes the plates right out and it's all I can do to *talk*. Of course, it has worked on my nervous system so that I imagine if anyone looks at me they are saying, "What on earth is the matter with her mouth?" If I take them out it is worse still, for I feel as if I should break my jaw without their support—and so I am an absolute cripple—of course I have tried every known remedy. Soreness is not at all cankerous—no festering—just inflammation and swelling. What can the trouble be?

G. L.

RELATION BETWEEN CARIOUS TEETH AND MALNUTRITION

By ALONZO MILTON NODINE, D.D.S., NEW YORK, N. Y.

THE Alpha of malnutrition and the Omega of its effects are found in the mouth.

"Vicious Circles Associated with the Disorders of the Digestive System" is the title of a paper in the *Lancet* for November 21, 1908, by J. B. Hurry. In a series of four groups of circles, those in which the oral cavity plays its significant part are described first.

The first group of circles has for its first are oral sepsis, leading to dental disorders, then gastro-intestinal catarrh with resulting malnutrition. The resulting systemic disturbance tends to lower local resistance and encourages the continuance of the infection and absorption in the mouth, completing the circle.

A perfect masticating apparatus uncared for, left to the corroding action of germs and fermenting carbohydrate food—sugars and starches—will almost inevitably break down, decay, and rot.

The process of mastication is the beginning of that series of chemical reaction which change raw material into blood and cells. The great use of teeth is to cut and crush food, and convert it into a pulp.

Two other factors besides mastication are necessary: First, a regulator—called Brains; second, material—called Food—that requires reduction to the consistency of pulp. Combine these three and the result will be clean teeth, well chewed food, and the right start given to proper digestion.

Diseased gums and decayed teeth, with the factors or agents that cause them, are frequently the ignored, the unsuspected, yet the underlying cause of malnutrition. Since malnutrition distributes its effects over the whole body, the mouth receives its share—its resistance to destructive processes is lowered.

What is the meaning of the word malnutrition? From a careful consideration of its causes and effects it may be said to be that condition or combination of conditions and effects, due to inefficient, insufficient, or excessive food elements, necessary for the proper growth and repair of the body cells, together with the absorption of incomplete or perverted products of digestion. This material may be furnished in the form of substances that cannot be split up into those simple chemical factors capable of absorption. It may be material that can only be incompletely changed—absorbable but not assimilable by the tissues. It may be due to the superabundance of material—the digestive ferments being equal to the task of changing but a part. Owing to the bulk of the ingested food, the gastric juices can act on

the smallest particles only, while the remainder, which has only the surface digested, passes into the small intestine, where the process, complete or incomplete, is repeated. It may be due to the presence of



A perfect masticating apparatus, left to the corroding action of germs and fermenting carbohydrate food—sugars and starches—will almost inevitably break down, decay, and rot.

pathological ingredients that ferment or putrefy proper material into improper substances, such as acids, toxins, ptomaines and other unidentified poisons. These being soluble and absorbable are disseminated by the blood to those organs which are normally able to neutralize a

limited amount, but in the presence of excess quantities fail to neutralize any and they themselves become affected.

Decayed teeth play three distinct parts in the production of malnutrition—incubators for germs; places for toxins, ptomaines and poisons, to be manufactured; and inefficient tools with which to work.

Sound teeth correctly placed but unclean, harbor and propagate multitudes of microorganisms. Between twenty and thirty distinct varieties of microorganisms have been found in such mouths. It should not be forgotten that the average amount of saliva secreted in twenty-four hours is 48 ounces, and that it has no antiseptic properties whatsoever discoverable.

The gastric juice, through the agency of the hydrochloric acid, is capable of destroying most of the microorganisms taken in with the food. During the resting periods—between meals—hydrochloric acid is not secreted, but there is a constant secretion of saliva impregnated with germs that breed fast in the fermenting remains of food, left upon or between teeth or their artificial substitutes. This saliva is continually being swallowed during even the sleeping hours, so that a continuous ingestion of germs, of even low toxic power, in time infects the lining membrane of the stomach and impairs the glands that secrete the hydrochloric acid, pepsin, and rennet. Further, other germs, more dangerous, may pass into the small intestine where they can be absorbed into the blood stream, and later infect the kidneys, liver, and pancreas—as well as produce toxæmias of all degrees of intensity.

These infections of the kidney, liver, and pancreas affect their proper functioning, so that perfectly proper, digestible, absorbable food cannot be perfectly or completely assimilated, cannot reach the cells in a condition fit to be built up into cell substance. This results in the united effects, called *malnutrition*.

When teeth are wrongly placed in the arch, the planes of occlusion are literally thrown out of gear, and their great function is incompletely and inefficiently carried out; food then reaches the stomach in a state not sufficiently chewed to be acted on thoroughly by the gastric juice. This may incite gastritis, or, passing into the small intestine, cause putrefaction and constipation, interfering with the proper nutrition of the body cells.

In certain cases of irregularity some common articles of diet cannot be eaten in the ordinary way, but must be especially prepared—corn on the cob, apples, etc.

Teeth that are wrongly arranged are harder to clean, invite collections of food and calculus, subsequent decay, and in addition, irritation and diseases of the gums.

Decayed teeth combine the effects of unclean teeth and ill-arranged teeth. Lack of cleanliness together with our modern diets are responsible for most of the decay of teeth. Decayed teeth cannot perform the functions of chewing properly; aside from the pain of sensitive cavities and exposed pulps, occluding teeth do not meet the opposing planes correctly if the decay is on the occluding surface; if the decay is on the approximate surface the axis of the tooth is changed, caused by the loss of tooth substance. So again the planes of the occluding teeth do not meet correctly. In such mouths lactic, butyric, or acetic acid fermentations are started, and are continued to an excessive degree in the stomach.

The fermented starches and sugars are very convenient and congenial media for the propagation of microorganisms, other than those producing fermentation.

The combination of abnormal fermentations, with the great variety of toxic germs, lays the foundation for such pathological conditions as *dyspepsia*, *gastric catarrh*, *septic gastritis*, *atrophy of the stomach*, *achylia gastrica*—insufficient production of gastric juice—and *gastric ulcer*, all of which make impossible the proper and normal preparation of food for absorption, assimilation, and nutrition.

All of these results are not produced in a day, a week, or a month, but may take a year or years to show their accumulated effects.

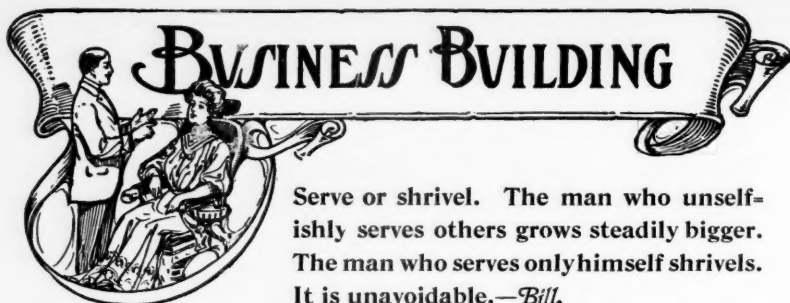
The dentist is the supervising architect of the first section of the most complex chemical laboratory in the world—the human digestive apparatus. He must recognize the importance of the position he holds; educate his patients to the importance of having teeth not only clean, sound, and in repair, but so placed that they may perform their great function properly.

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- "Hygiene of Nutrition"—Henry P. de Forest.

ONE WEST THIRTY-FOURTH STREET.

THE Uruguay Dental Society is organizing a clinic for the benefit of deserving poor, where all work except bridge and crown work will be done gratis. Also, when required, medical aid will be rendered. The expenses will aggregate about \$3,500 per annum, of which the Government is expected to furnish \$150 per month, the balance being supplied by the society.—*Daily Consular and Trade Reports*.



A TRAVESTY ON PROFESSIONAL INTELLIGENCE

BY WESLEY DAVIS, D.D.S., SALT LAKE CITY, UTAH

This matter of reciprocity is one that we must face. It is a travesty on our honesty, our humanitarianism, and our ability, that we have not some arrangement whereby dentists of known technical ability and good character can practise in any one of our states. How many of you men who have been in practice ten years could pass the examinations in college now? I was graduated from the University of Michigan and am proud of it, but I couldn't go back there and pass the examinations of to-day. And if you've done anything really worth while for yourself or your profession, the chances are that your mind has been so crowded with practical things that much of the purely technical information has been crowded out. And you'll find it hard getting it back. Yet you may to-day be doing things from which your profession or your patients will profit for years.

If I knew how to go about it, I'd like to take up the cudgels in behalf of reciprocity. I haven't any doubt that selfishness and ignorance and insincere ethics lie behind the reasons offered against any intelligent solution of the matter. It is incredible that we couldn't settle this question if we really wanted to. Perhaps we couldn't settle it perfectly. We might even do some injustice, but we're not likely to do more than our inactivity is doing now.

If you have anything to say on this line, say it. The *DIGEST* is beholden to nobody. It merely seeks truth and justice. And those are what we all ought to want.—EDITOR.

A CIRCUMSTANCE which was very pitiable suggested a name for this article.

A few years ago a brother dentist came to me and requested time for an interview. At the appointed hour the doctor and his wife were present. The following is the story of that interview:

Dr. — was a man of irreproachable character and a highly respected citizen in an Eastern community, where he enjoyed the most lucrative practice in the entire county. The good wife had been an invalid for several years and the doctor had spent much of his time and most of his savings in a search for a climate where a tubercular wife could live and hope to get well.

Medicines and dietary therapy were tried again and again with the

usual results. The doctor was loath to give up a good practice, hence all methods of treatment were first tried. The wife eventually came West and soon began to improve, but she could not be content to remain in the West alone. Tubercular patients tell me recovery is almost impossible if the subject suffers from lonesomeness. The condition of the wife became such that the doctor came West. The patient soon improved and in a short time was free from much of the distress of the awful disease.

Here was a cultured gentleman, a skillful dentist. His remarks led me to believe he was graduated in the late eighties. He admitted that he had been a busy practitioner and had consequently neglected the theory of the profession. As a result of this he had been refused licenses to practise in more than one western state.

At the time the doctor was here the Utah State Board was in session and he was taking the examination for the second time, having failed the first, but the board generously permitted him to practise under a promise to be on hand at the next examination.

The doctor knew he could not pass a creditable examination in theory and he requested me to explain matters to the board should he fail in this attempt, after trying to learn, or rather relearn some chemical formulæ and familiarize himself with a few truths regarding bacteriology. It so happened that the doctor was given his license and I offered no suggestions to any member of the board.

I have often wondered whether or not the board knew the circumstances and passed this man whether his theory was good or bad.

This dentist was practising in a remote part of the state and any kind of dental service was a blessing, as the place where he was located was about 100 miles from the railroad.

Now, to get at the purpose of this article, let me ask two questions: Which was the more just and charitable act?

- (1) To refuse the license and make the doctor and wife paupers, or
- (2) Grant the license and thereby permit him to make a living for himself and wife, and allow him to live in a community where he could provide for the comfort of his wife and where she had a chance for complete recovery?

Personally I should grant such an individual license though he could not distinguish microscopically the difference between the diphtheritic bacillus and a horned toad. In granting a license to such a man he can follow *his* business and provide for an unfortunate wife and also render a service to his neighbors they otherwise could not possibly get.

I take it that the purpose of all dental legislation is to protect the

public against what might be called "spurious operations," and if *that* is the purpose, the enforcement of the same is a huge joke. The great desideratum of professional brotherhood will never dawn until we have a system of reciprocity suiting our calling. The great majority of professional men who change locations do so because of ill health, though there are other causes, viz.: desire for better schools and advantages which cannot be enjoyed in all places. Then there is another thing: It is a well-known fact that some dentists are failures in some locations and tremendously successful in others, and I believe these men should be permitted to go to a desirable place without (ethical?) inhibition.

In all my conversations with dentists of various states I have yet to find one who does not favor reciprocity, provided the applicant for admission can furnish absolute evidence from the Secretary of the State Dental Society that he is a competent dentist and a professional gentleman. Those two words "professional gentleman" mean something, and represent that you are dealing and associating with a man and not with an individual addicted to trickery, chicanery or professional discourtesy. Now in all fairness I would ask the following:

Is it equitable or right for a state to invest a few men with absolute power to pass on the qualifications of another and determine whether or not he shall be permitted to follow his work in that state?

I would also ask this:

Who are the most competent to judge of a man's qualifications? Other dentists who have been associates for years and who *know* his capabilities, attainments and conduct, or a board of four or five men to whom the applicant is a stranger? I believe you can almost bank on this applicant's subsequent demeanor when he comes recommended by his State Dental Society.

This system of recommendation would not be infallible and I am sure no system would be, still I am firm in the belief that you could almost put your finger on the Judas Iscariots of the profession as soon as they made application for admission.

The requirements that states demand of a citizen of another state work the severest hardship on those of the profession to whom leniency and favors should be shown. I refer to the old practitioner.

What condition is more galling to an old and faithful dentist than the realization that a state has refused him a license to practise because of inadequate knowledge of theory, and at the same time realize that some young man just from college, who in ten years will not acquire the skill and dexterity which he now has, is granted the privilege which is refused him?

I tell you, my fellow practitioners, that this condition needs a radical and speedy change.

Some years ago graduates of the Dental Department of one of our large universities received from the secretary of the state dental board a notice to the effect that, until a certain time (long since passed) upon the payment of a certain amount, alumni of said school would be given licenses to practise.

We all admit that it is ridiculous for residents of one state to pay yearly dues in other states, and such legislation is a rank injustice to an old alumnus who may desire to practise in the state of his Alma Mater.

I maintain that the graduate of the nineties is capable of better dentistry than the graduate of 1912, and for this reason and the fact that there is no justice in such a law, I am sure that the fraternity of that state made a mistake when such a law went into effect.

The legal fraternity whose members pass on the constitutionality of laws has no such limitations governing the admittance to another state of a member of that profession. If a lawyer has a certificate to practise before the Supreme Court and desires to change locations, he is, upon the presentation of his credentials, admitted without any red tape.

The Supreme Court of the state to which this lawyer makes application grants that the new member comes endowed with all the qualifications to conduct his business in an honorable and dignified manner.

In dentistry it is different, you must prove your right to practise to a board which is sometimes composed of the poorest dentists and the best politicians.

The stigma attached to some of our state boards has anything but the fragrance of a geranium. No legislation, no matter how severe, will rid us of the unscrupulous dentist, the truth of which is witnessed by the fact that in states in which entrance requirements are most exacting, the most flagrant examples of unprofessional conduct are to be observed.

A member of our state board told me that two of our most successful advertisers passed the best examinations of any applicants before the board.

A few days ago I was telling the secretary of one of our state medical boards of these very conditions of which I am writing, and I asked him the attitude of his profession regarding reciprocity. I was surprised to hear him say that at present "this ideal condition," as he called it, was a long way from consummation, and to my surprise said that Oregon, Washington and California objected most strenuously to an interchange of licenses and then the secretary admitted that general

reciprocity was not possible because of *selfishness*. The great majority of the physicians of the three states mentioned is represented by either Easterners or native sons. Anyone would think that *selfishness* was a most contemptible screen for one of the most learned professions to hide behind in defense of a most reprehensible, unjust and undignified system of harpooning a brother practitioner. Members of the dental profession who desire to change locations face exactly this condition of affairs.

I wonder how many dentists realize that the A. M. A. will expel from membership a physician who invents an instrument and sells the same himself, and yet there is no objection when some mechanic does the same thing and reaps the benefit of such an invention.

Strange thing, that charitable attitude toward one of your own calling!

Take another phase of the situation.

Another physician writes a book (or has an assistant do it, as one M. D. put it), and this work "of plagiarism" is copyrighted and sold for information (?) and not for the benefit of the author. Will some discerning individual please draw the distinction between selling the product of one's brains whether represented through some useful instrument, or through a book, good or bad? We all admit without argument that the distinction is so ridiculous that it is scarcely worth comment, and yet a violation of the inventive restriction will cause a physician to lose his professional standing.

In the baseball vernacular, this part of ethics is "rotten." The best way to get the best out of an individual is to treat him as a *man*, a person to be trusted.

Offer brotherly kindness rather than display suspicion and reflect on the fact that you feel that this man is "butting in" on some of your prerogatives.

Were this interchange of licenses general to-day, does anyone believe the proportion of "shysters" would increase? I, for one, do not think so, as cities seem to support just so many "shysters" and no more, and the nomadic tendencies of this type of dentist attest the confidence a community has in them.

I know of a former Illinois dentist who, because of a confirmed physical invalidity was compelled to seek the climate of California. This "grand old man" is one of the most dexterous men of the profession and is held in such esteem by former Illinois patients that many are tempted to go halfway across the continent to have him do their dentistry. For the last sixteen years the perfume of this "grand old man's" existence has been a benediction to the citizens of this Califor-

nia town. To-day this wonderfully dexterous dentist could not pass an examination in theory, and yet with his theoretical shortcomings I would prefer him as a teacher and adviser to any men I have ever known.

Can any man, or set of men, support the ethics of a profession that will countenance a law which prohibits such wonderful skill, as this dentist possesses, from being exercised?

Some years ago certain citizens of Denver, Colorado, were anxious to have an ordinance prohibiting residence to tubercular patients. Through the anathemas hurled at this element of Denver's citizenship by an eminent lawyer, resident of that city, the inhumanity of such a law was portrayed in such a forceful way as to preclude the possibility of considering such an ordinance. This lawyer had been a victim of tuberculosis and had recovered because he had found just the place for him and he desired that others likewise afflicted should have the advantage of a climate that made him a vigorous man. These instances are cited because they bring home to us the injustice of our present system of professional admittance into the various states. Such laws almost suggest that the proletarians of the professions are in every other state but the one of which we are citizens. No one believes such to be the case and it is strange that the laws are not uniform.

We all admit that the laws are wrong, and let us right them. Many of the state legislatures convene this coming year and we could get action, and bring about an ideal condition whereby dentistry shall be freed of an obnoxious impediment and assert itself for freedom, professional brotherhood and honor.

I hope Utah will be the first to adopt general reciprocity.

The only provision the law should have is that the applicant shall have the unqualified recommendation of his State Dental Society.

837 BOSTON BUILDING.

THE BUSINESS VALUE OF WELL-KEPT HANDS

I HAVE a dental friend who has long taken what seemed to me unnecessary care of his hands, especially his nails.

So many matters have demanded attention that I never gave it much thought until recently. But just lately he made some needed repairs to my teeth. He had the rubber dam on a third molar. And all I had to do was to take it easy and think.

After the "hurty" part was over I fell to noticing his hands. They were very close, much of each hand within plain sight part of the time. And frequently when it wasn't in sight, it was because it had entered my mouth or closely approached it.

I tried to forget that I was a dentist and a friend. I tried to imagine myself merely an intelligent patient, a little nervous, maybe, and quite a bit critical of things I understood.

I glanced about to see how things suited me. But I paid especial attention to the hands which were often so close. And I saw that they were thoroughly clean. I noted with satisfaction that the sides of the nails, where dirt so easily lodges and dead skin so often appears, were practically spotless. The cuticle about the root of the nails was clean and trim.

I wondered how I would feel were the nails carelessly kept. If the fingers, as they pulled my lip aside, were soiled; if dirt and dead skin lodged about them I am sure I should not relish it.

I find from inquiry that many patients are more observant about such things. The women are especially observant. And they form the vast majority of patients.

So I've learned a lesson about my own hands. And I follow my friend's few simple rules for care of the nails with much benefit to myself.

A pair of cheap working gloves protect the hands while doing dirty laboratory work.

An orange-wood wedge with pumice and soap and water will clean under the nails as few other things will. Sometimes stains require a few drops of H_2O_2 . The same wedge and pumice cleans about the sides of the nails and at the roots.

A gold file makes a good nail file. A pair of cuticle scissors for trimming about the roots of the nails completes the outfit.

A few minutes every second day, together with the use of the nail brush, keeps the nails clean.

It's good business.

Some patients don't care. Many do care. And those who care usually command the influence and the money.

Aside from personal or sanitary reasons it pays to care for the hands.

The trials that make us
Fume and fret,
The burdens that make us
Groan and sweat,—
Are the things that haven't
Happened yet.—*Exchange.*

AN OUTLINE OF THE BUSINESS SIDE OF DENTISTRY

BY EDWARD S. BARBER, D.D.S., CHICAGO, ILL.

It is interesting to see how other dental magazines have taken up the Business Side of Dentistry. In 1910 it was a pretty lonesome fight—the DIGEST on one side, all the others on the opposing side.

But that's ancient history, and none of us cares, not even the writer. The more intelligent workers and work we have on this line the better. The article digested herewith is helpful.—EDITOR.

WHEN the DIGEST commenced its excellent line of articles on the "Business Side of Dentistry" something happened right away. The overethical members, thinking they had a duty to perform, started to bombast and roar, and the old line journals, fearing to keep silent, followed suit, but all to no avail, and why? Simply because the body of dentists at large are more interested to-day in solving the problem of how to pay their grocery bills and provide for their families in comfort than they are in listening to the moth-covered theories of the old-timers. The result was a gain of about 10,000 paid subscribers in two years; showing that at least one dentist in every four in the United States to-day is waking up and looking out for his financial interests. Letters from many of these men show they are using the Twentieth Century advice the DIGEST has spread broadcast, with a marked change for the better in their financial condition.

With at least one dentist in every four interested in this financial proposition, it is time for the societies to face the matter squarely and make the financial question the coming issue and settle once for all the question of getting business.

It is certainly as reasonable for dentists to "get business" as for any other man of affairs. The professional man has been too long in the clouds and regarded himself a little better than men in other occupations. But does he, and does his wife ever look with envy on the wife of the butcher or bricklayer because they have better clothes and ride in autos while she has to walk?

The dental journals furnish a continual post-graduate course. In looking over the articles which apply to the business side of dentistry alone, in eleven dental journals I found enough material to make an entire college course in three issues. These articles are all good, and I wish every dentist could read them; for this reason I will enumerate them and you can probably find all the copies in your library:

1. ORAL HYGIENE, March, 1912: "Common Sense." Same number: "Care of the Teeth." Same number: "How to Prevent Decay of Teeth."

2. DENTAL DIGEST, February, 1912: "Business System in Dentistry." Same number: "Brother Bill's Letters." DENTAL DIGEST, January, 1912: "Brownstone Dentistry."

3. DENTAL BRIEF, February, 1912: "Shimura on Hard Foods."

4. DENTAL REGISTER, February, 1912: "Dental Economics."

5. DENTAL REVIEW, March, 1912: "Unnecessary Pain During Dental Operations."

6. BRITISH JOURNAL OF DENTAL SCIENCE, February, 1912: "Professional Fees."

7. PACIFIC DENTAL GAZETTE, February, 1912: "The Potency of Suggestion in the Practice of Dentistry."

8. DOMINION DENTAL JOURNAL, February, 1912: "Anesthesia in Dental Surgery." Same number: "Elimination of Credit."

9. THE BUR, January, 1912: "Health Bulletin."

Not all the good business ideas are found in dental journals, however; in fact, most of my help has come from outside, and I will simply mention a few helps that every dentist should have in his library.

1. "Sheldon Course of Scientific Salesmanship."

2. Parkyn, on "Suggestion."

3. DeFord and Hewitt, on "Anæsthetics."

4. "Practical Dentistry by Practical Dentists," by Bromell.

5. Sylvester Simon, on "Physical Perfection."

6. "The Mechanical Side of Anatomical Articulation."

7. "The Life of Napoleon."

Good health is one of the principal assets in dentistry. Our work is hard and confining, and the natural inclination is to shirk physical exercise, although a certain amount of it is absolutely necessary. The course outlined in Professor Simon's book is sufficient for our purpose, and fifteen minutes' time per day devoted to these exercises, followed by tepid bath, will tend to keep one physically fit for the work of the day. Horseback riding and automobiling are more desirable outdoor exercises than walking, and the main proposition is to take any form of exercise that will exercise the lungs, for we work in a stooping posture, which not only interferes with proper breathing, but cramps the intestinal tract and interferes with digestion. We all know that dentists die at least ten years earlier than men in other professions, largely caused by kidney troubles and things of that sort. I personally know that when I am feeling fine I can meet a new patient and on a large case sell my services for \$100 more than I can on a day when I am feeling badly.

Acting in a preventive sense, dental services are much more valuable

to the patient than are the services of a physician who palliates or cures chronic conditions bad teeth have caused. Should the new patient complain of pain, it is well to relieve it at the first visit, simply to exhibit your skill. At the next visit I usually have a heart-to-heart talk with the patient, lasting nearly an hour, in which I give him my selling talk and either land the case for all the work needed in that particular mouth, or dismiss him as hopeless and never see him again. Each dentist must perforce learn his own "selling talk," and no particular rule will apply to every case. A dentist has to literally sell himself. He cannot tell the patient he is the best dentist in town, for that would simply be "quackery." He can often leave this impression in the patient's mind, however, by educating him as to his condition, and for this reason I believe the knowledge of physiology is one of the most valuable aids I have ever found.

I believe in securing a deposit of from one third to one half the entire amount before commencing the operation, with an understanding that the balance is to be paid in from thirty to sixty days. If you make this arrangement beforehand, it will appear to the patient as a straightforward business proposition. But should you wait until a share of the work is done and then begin asking for money, the patient may think you are suspicious of his intentions to pay, or may think that you are hard up and not able to carry an ordinary account, either of which makes work for the bill collector. In following out the above system I only lost \$8 in my practice last year, and that particular amount was with a patient where I had made no preparation, but did the work and made my business talk afterwards.

At the present time we are only scratching the surface. I do not believe 10 per cent. of the necessary dental work is being done, and the reason for this in most cases is not because of its cost, but because of the fear of pain. Once having proved to the ordinary individual that you can do his work without pain, he will have you do, not only the tooth that was hurting him, but all the necessary work in his mouth, and instead of a fee of a few dollars one can usually secure a fee of several hundred dollars. We all know that it costs as much to educate a patient for a \$2 fee as for a \$200 fee, and that there is a great deal more profit in proportion in large cases than in small ones.—*Oral Hygiene.*

MOST DENTISTS ARE EASY-MARKS

I HAVE read Brother Bill's Letters, and enjoyed them; I have read the articles in the DENTAL DIGEST, and agree with most of them; but I object point-blank to the manner and methods that protect these "Tooth Carpenters."

The people as a whole, classify this profession into two distinct and different classes: The high-priced dentist, who is a poor collector, and the reasonable-priced dentist, who makes you pay.

The first charges by time or piece work, and has a great thought of the money, but not the nerve to ask for it, except by statements, thereby making it hard for other dentists, who insist on the money. These are called "Easy-Marks," for anybody can sell them articles (they don't want or need) because that dentist has done some little piece of work, some years ago, and they think they have a right to come in and sell them anything, from a necktie to a chance on a diamond ring. Agents prey upon this class, because of their inability to foresee the future and buy in such quantities, considering quality, as to save retail profits, which count on the years' business. All praise to the man who can charge good prices, and collect them.

The most of us belong to the second class, and we have a right to belong there, for we all had to start, and most of us are still starting. Some of us, as I read in the DIGEST, really haven't started rightly, while others have shot ahead and are putting the American Eagles in the bank, or investing in property, as we all should be doing. What's the matter? There seems to be a tendency in this class to lack the same qualifications that the first class need—backbone, educated nerve, and self-control in business and in official duty. This class is subject to the use of printer's ink to help out. We are all fully aware of our accomplishments, and what we can best do, but we don't like the sound of advertising. The colleges, the dental depots, the department stores, the factories and the dentists who are getting the most business and are collecting the money, are using printer's ink to help out, and I think that when you and I have used some of the same "black compound" from the printer's rollers, we can see that education by personal talks, or education in printer's ink is one and the same.

I want to commend the work of advertisers who do that kind of work (omitting prices) and educate the people, who commence to think of their teeth, before they are driven to the dental office by a tooth that has deprived them of from one to ten nights' slumber. All honor to the ad writer who educates the people in that sour state of dental delin-

quency to a higher state, and causes them to call on their dentist (which helps you and me alike) to have repairs on their teeth.

People in a very short time will demand "Painless Dentistry," specifically, "Painless Extracting of Teeth"—Why? Because they can thoroughly understand. "Pull without Pain." If you haven't learned this important part of dentistry, not taught in the colleges, it would be wise to learn it and quit saying that "Painless Dentistry" and especially "Painless Extracting of Teeth" is a theory and an impossibility. Get next.

Too many dentists fail to meet the needs of humanity in three ways:

1. What the people call for.
2. What they can afford.
3. Collections.

In the first instance, most everyone will be positive that they know exactly what they want, and about what the cost will be, since they hear and see other friends' work, and what they had to pay for it.

In the second instance, we show our quality as a business man and as salesman by actually proving that they want something better, stronger or prettier, and by never mentioning the price until a deposit sufficient to commence the work is made.

The third or last condition is where most of us are too timid to talk up for ourselves. What would you do in this instance—A man twenty-eight years old has a good job, paid by the month, week or two weeks—calls on you and you make an estimate of \$57 for an eight-tooth bridge, and you remove 4 or 5 old roots; you ask for a deposit and get \$10—you feel like a king, to think it so easy, and he in turn tells you that he will be able to pay the rest at \$5 or \$10 a month. What do you do?

Here two distinct classes operate; one who pays, and fulfills his promise; the other who promises anything and beats you out of the finish. If you finish up this patient's work, you don't know that you will get the money, and if you do get all the money you are surprised; if you take his note as security, it most likely will be worthless at the bank; an assignment of wages will scare him away and your competitors will take the chance and possibly get beaten in the shuffle. No law can force a debtor to pay (to my knowledge) if he is not willing to pay, unless he is financially responsible—but that deals with another class.

The married man with a good job needs dental work. How can you protect your work and yourself, which includes your practice, against him, yet do all his work and rest assured that you will *get the money*? Lawsuits, garnishments, statements and attachments, letters to employers are all void, and you waste your time, your professional

effect, and your business in general by so doing, for even when you do attach, look what the court takes out before you get anything.

Positive Cure—Go to the loan shark, the easy-payment furniture man, or the man who makes a specialty of crediting people; see how he does it; see what he requires before he credits anyone; get acquainted with the business principles and put them to use.

All honor to the dentist who gets the business; gets good fees; and last, but most important, *gets the money*. Honor and glory are for the dead, but the man in business should get the fees for his work. Are you getting yours?

A. P. D.

BROTHER BILL'S LETTERS IN FRENCH

Brother Bill's letters have not been confined to the English language. A small portion of some of the translations is here reprinted (from *Le Monde Dentaire*, Paris, July, August, September) as a matter of some interest.—EDITOR DENTAL DIGEST.

LETTRES DE FRÈRE BILL

PAR A. VERNON

LE DENTAL DIGEST vient de publier une série de lettres adressées par lui à son frère Jack et à quelques amis qui sont aussi dentistes, mais dans une situation beaucoup plus modeste. Ces lettres contiennent de précieux renseignements que nous sommes heureux de faire passer sous les yeux de nos lecteurs.

Il est aisé de voir l'auteur a adopté cette forme amicale pour donner aux dentistes certains conseils et émettre certaines opinions qu'il eut été plus difficile de publier dans un autre style.

Nous nous proposons d'analyser ici quelques-unes de ces lettres qui sont vraiment très intéressantes au point de vue professionnel.

PREMIÈRE LETTRE À SON FRÈRE JACK

Mon cher Jack,

J'ai assisté hier à une réunion professionnelle très passionnante. Je ne te cacherais pas que j'y ai goûté beaucoup de plaisir et, malheureusement, éprouvé aussi un peu d'amertume.

Le premier orateur qui a pris la parole était un jeune dentiste, d'un physique agréable et d'une tenue irréprochable. Il a parlé très longtemps et a dit des choses très intéressantes sur la dignité et le savoir professionnels. Suivant lui, le dentiste doit se préoccuper, avant tout, de connaître admirablement son métier et de l'exercer avec la plus grande dignité et le plus absolu désintéressement. Lorsqu'il a conscience d'avoir atteint le summum de l'art, il peut se considérer comme complètement satisfait. La partie financière n'est rien, et tel dentiste qui vit péniblement et arrive au seuil de la vieillesse sans avoir pu songer à faire quelques économies pour ses vieux jours, est cependant un grand dentiste s'il a su exercer son art d'une manière parfaite, tant au point de vue scientifique qu'au point de vue de la dignité professionnelle.

Quand l'orateur eut cessé de parler, il fut vivement applaudi et le président de la réunion lui adressa quelques compliments bien tournés qui eurent l'adhésion de l'assemblée.

Pourtant, il m'a semblé que ces applaudissements n'étaient pas sincères.

Moi même, pendant que l'orateur parlait, je me sentais heureux de constater chez un confrère de tels sentiments et une hauteur de vue si remarquable; mais j'éprouvais aussi quelque peine en songeant aux déboires qui attendent le confrère trop scrupuleux quand il n'a pas songé d'une façon suffisante à ses propres affaires. Je me disais que la science et l'art sont de bien belles choses, mais qu'il faut cependant songer à vivre et à faire vivre les siens; et je pensais que le dentiste vraiment indépendant qui a acquis quelque expérience et est parvenu à une certaine situation, doit avoir le courage de parler à ses jeunes confrères et de les mettre en garde contre les écueils qu'ils peuvent rencontrer sur leur route et qu'ils ne voient pas, étant uniquement préoccupée de leur art.

Je me décidai à demander la parole et commençai par déclarer tout de suite que le discours si remarquable que venait de prononcer l'orateur me paraissait cependant avoir une lacune. Faire de l'art, vivre de science, c'est parfait; mais la science et l'art ne nourrissent pas, et pourtant chacun a le droit de vivre de son travail, tout en exerçant son métier avec la plus grande conscience et en s'appliquant à se perfectionner chaque jour dans la pratique de l'art dentaire.

J'avais à peine commencé que je vis la figure de mes auditeurs s'épanouir et m'aperçus bien vite que j'avais captivé leur attention.

Je n'hésitai donc pas à entrer plus avant dans mon sujet.

Je citai le cas du Dr. Auguste D., universellement connu et apprécié pour ses qualités morales, son grand caractère, ses manières courtoises et son habileté professionnelle; je rappelai ses merveilleux travaux qui, pendant plus de 25 ans, ont fait l'admiration de tous les dentistes du Nouveau Monde et j'ajoutai que pourtant le Dr. Auguste D. était loin d'avoir fait fortune. Tout le monde sait que sa clientèle est peu étendue, qu'il a toutes les peines du monde à vivre et faire vivre sa famille; enfin qu'il arrive à un âge où il n'a plus l'espoir d'augmenter sa clientèle et ses ressources sans avoir pu faire d'économies.

PREMIÈRE LETTRE À UN CONFRÈRE

Cher ami,

Je vois avec plaisir que vous avez suivi mes conseils pour l'augmentation de vos prix et que vous en trouvez bien. Vous me demandez comment il faut s'y prendre pour amener les clients à payer des prix plus élevés.

Certains confrères s'imaginent à tort qu'il faut tenir compte de la nature de la clientèle que l'on est appelé à soigner. Dans certains pays, disent-ils, on peut demander les prix que l'on veut; dans d'autres on n'arrive pas à travailler même en réclamant des prix dérisoires.

Cela n'est pas tout à fait exact. Je vais, pour vous en convaincre, vous raconter une histoire qui m'est arrivée lors de mes débuts.

J'exerçais à cette époque dans une petite ville de 2.000 âmes, peu commerçante. Il y avait la moyenne ordinaire de gens fortunés, de petits bourgeois et de pauvres.

Les gens riches avaient l'habitude d'aller se faire soigner à la ville voisine; mais, en revanche, la campagne environnante fournissait un appoint de cultivateurs et d'employés de culture.

J'étais le 17^e dentiste venu dans cette ville et le cinquième qui occupait le même cabinet.

À titre de renseignement, je m'informai de l'histoire de mes prédécesseurs. L'un d'eux avait gagné assez d'argent pour faire construire deux ou trois maisons. Il mourut peu après; la surprise, l'émotion et la joie l'avaient, sans doute, tué.

Un autre qui était célibataire avait pu, en dépensant cinq francs par jour pour ses besoins, économiser environ 10.000 francs, mais il avait toujours refusé de se marier disant qu'il ne pourrait certainement pas faire vivre une famille avec si peu d'argent.

Les quatorze autres dentistes étaient morts pauvres ou avaient disparu.

Lorsque j'arrivai, je me rendis bientôt compte que le public de la ville n'avait aucune idée des bons soins, mais qu'il avait surtout le souci d'épargner l'argent qu'il gagnait si péniblement.

Pour une population d'environ 30.000 âmes dans la ville et ses environs, nous étions six dentistes. Ceux qui étaient installés avant moi étaient tous habiles et bien installés; mais, par aberration et manque d'adresse, ils avaient diminué leurs prix d'une façon ridicule.

Quand je réclamaï à un client les prix que j'avais établis, c'est-à-dire cinq francs pour une obturation, plus 10 francs pour traitement, vous ne pouvez vous figurer quelle peine j'éprouvais à faire comprendre que ce prix n'avait rien d'exagéré.

Pourtant, avec beaucoup de mal, j'arrivai à persuader à mes clients qu'ils payaient encore moins cher que pour un travail mal fait.

DEUXIÈME LETTRE À UN CONFRÈRE

Cher ami,

Lorsque dernièrement j'allai vous rendre visite, vous avez reçu en ma présence une cliente. Permettez-moi de vous faire d'utiles observations sur la façon dont vous l'avez traitée. Je ne sais rien vous dire en partant car j'eus peur de vous blesser. Mais à la réflexion, j'ai pensé que vous étiez un homme trop intelligent pour vous froisser de remarques que vous reconnaitres exactes et faites uniquement dans votre intérêt.

Cette dame, je vous le rappelle, venait vous voir pour vous faire réparer un dentier du haut. Elle avait perdu une dent qu'il convenait de remplacer.

Vous avez placé votre cliente sur le fauteuil, vous avez pris très soigneusement l'empreinte et vous l'avez poliment reconduite.

Quand je vous ai demandé le nom de cette dame, vous m'avez répondu que c'était Madame F., la femme du grand épicier de la rue.

Eh bien laissez-moi vous dire que votre façon de faire m'a donné une triste idée de votre habileté commerciale et même de vos capacités. J'ai pensé que vraiment vous méritiez de rester pauvre.

Comment, voilà une personne riche qui vient chez vous pour une réparation et vous n'examinez même pas sa bouche! Vous n'avez pas vu que cette bouche avait besoin de soins nombreux et délicats! Vous n'avez pas remarqué que l'appareil qu'elle vous apportait était inutilisable! Fait plusieurs années auparavant, par un dentiste quelconque, cet appareil en vulcanite ne tient plus sur les gencives qui se sont modifiées, il ballotte et risque à chaque instant de se rompre. Je suis sûr que cette dame ne peut pas mastiquer avec cet appareil; et vous songez à le réparer! En vérité, vous me faites songer à cet homme qui prétendait ne pas voir une forêt parce que les arbres l'en empêchaient. Vous étiez hypnotisé par le petit travail qu'on vous demandait et vous ne songiez pas à regarder à côté! Ne vous fâchez pas de ma franchise, vous n'êtes pas le seul. La plupart des dentistes agissent ainsi et c'est ce qui explique l'état stationnaire de leurs affaires.

Je dois, du reste, reconnaître que je fus moi-même sujet à cette erreur jusqu'au jour où un client que j'avais déjà soigné me fit involontairement d'ailleurs, apercevoir de mon ignorance. Le service qu'il m'a rendu est immense et je lui en serai éternellement reconnaissant.

SERVICE SELLING TALKS

NUMBER NINE

BY W. F. DAVIS, D.M.D., NEW YORK CITY

"Good morning, Mrs. Green, what can I do for you to-day? I don't think it's toothache this time. You look too cheerful to have an aching tooth."

"No, I haven't any toothache this time. You've given me so many lectures about taking care of my teeth that I'd almost as soon think of having a finger cut off as having a tooth extracted. I am coming some time within two or three weeks to have my teeth examined. I don't think there's anything the matter with them, but when I come in you almost always find a few cavities that I didn't know were there. I brought Mabel to have her teeth looked at. Mrs. Brown has been telling me that you gave her an awful talking to because she wanted some of her girl's teeth extracted. You certainly convinced her that children's teeth need to be cared for from the very first and I thought perhaps I ought to have Mabel's teeth examined. I don't know that they need any attention, but it won't do any harm to have them looked at."

"That's right, Mrs. Green, 'an ounce of prevention, etc.,' you know the saying. How old is Mabel? Seven? She ought to have her six-year molars entirely through. They are not through yet, but they are coming all right. You can feel the bunches on the gum where they are pushing their way through. She is a little backward about getting her permanent teeth, but those already through are in their proper positions and look to be all right. She has a good size jaw and the arch of the teeth is very good at present. I should recommend a careful watch of her teeth for the next two years or until the temporary teeth have all been replaced by the permanent set. Examinations three or four months a year cost very little. Possible irregularities can very readily be corrected if attended to at once."

"I want you to do whatever you think is right, Doctor. What you told Mrs. Brown about neglected teeth and crooked teeth having such an influence on a child's whole future made a great impression on her, and it did on me when she told me what you said. I've seen quite a number of girls who would have been quite pretty if their looks hadn't been spoiled by a bad mouthful of teeth. I don't mean to have any of my children's teeth neglected because of the expense."

"You are quite right, Mrs. Green, and I am sure they will be grateful to you when they become men and women and realize what your care has done for them. I cannot impress too strongly the importance of early attention to children's teeth. Suppose your Mabel should grow up to womanhood with great irregularities of her teeth. Any irregularity would amount to more or less of a deformity. It is a handicap to future success in society, in business, as a teacher, a clerk or a stenographer, or in what is usually considered of much greater importance, a satisfactory marriage.

"The mouth and teeth are usually the first feature that impresses one. Very often we hear the remark, 'What beautiful teeth Miss — has!' Miss — may be very low in the intellectual scale. She may not be able to utter two consecutive sentences of correct English, but, she has 'beautiful teeth' and she usually makes the most of this attractive feature by smiling frequently. The same is true in a lesser degree in the case of a boy. His chances in life are lessened by a bad set of teeth. I am afraid you think I am exaggerating."

"Well, Doctor, at first I did, but I can see the truth of what you are saying, because I can remember cases of people that I have known that prove what you have been claiming. But why haven't some of my other dentists told me about the great value of the early care of the teeth? I have been to several and not one ever said a word about caring for children's teeth."

"I really do not know why dentists do not tell people more about prevention and less about restoration. It seems to me there is much more credit in preventing decay and loss than in repairing and replacing. I may be a monomaniac on this subject, but I believe the future will show that I am right. If my special training as a dentist has taught me the value of watching the development of the permanent teeth I consider it my duty to teach my patients as I am now teaching you. Mabel will remember this teaching. She will always take good care of her teeth because it has been a part of her early training. She will care for her teeth just the same as she will wash her face. How about your other girl? Are her teeth all right?"

"Oh, Ruth hasn't begun to get any of her second teeth. She is only five years old. Some of her front teeth are getting loose and I think the second set are coming through. Perhaps you had better look at her mouth, but I am quite sure her teeth are all right."

"Now, right here is a practical demonstration of just what I have been talking about. Ruth's upper jaw is contracted and will not be large enough to give room for her permanent teeth. You will notice that even now her upper teeth close slightly inside the lower teeth. To

a casual observer Ruth's teeth appear to be normal and not in need of any attention. To the trained eye of the observing dentist appears the urgent need of attention. Ruth is rather slight and her jaw has not developed as it should."

"I am very greatly surprised, Doctor, I certainly thought Ruth's teeth were all right and did not need attention. I have perfect confidence in you and wish you to do whatever is best. I certainly want all my children's teeth properly attended to when they need attention most."

"I am certainly glad I saw Ruth's mouth now, because it means less work than if I had seen it three or four years later. I want you to watch what I do, from time to time, and I will explain to you the methods as the work develops. I am very sure you will understand and approve the methods and realize the beneficial results. Come in with Ruth to-morrow and I will take an impression and begin operations."

(Service Selling Talk No. 10 is expected to be published in the March number.)

SYSTEMATIC promptness lies at the foundation of success. Learn to drive your business, and never let your business drive you. Be careful what you agree to do, but do what you have agreed, and do it promptly.—WILLIAM H. BALDWIN.

THE way to fortune is like the Milky Way in the sky, which is a meeting of a number of small stars, not seen asunder, but giving light together. So there are a number of little and scarce discerned virtues or rather faculties and customs that make men fortunate.

—LORD BACON.

CREDIT is the sympathetic nerve of commerce. There are men who do not keep faith with those from whom they buy, and such men last only a little while. Others don't keep faith with those to whom they sell, and such men do not last long. To build on the rock, one must keep his credit absolutely unsullied, and he must make a friend of each and all to whom he sells.—GEORGE PEABODY—*System*.

EXPERIENCES

THIS DENTIST IS IN A SERIOUS POSITION

Editor DENTAL DIGEST:

I HAVE read Brother Bill's Letters and the comments on same by others, with profit, but still my case seems to me to demand a little different treatment. I would greatly appreciate a letter of advice from you as to the best course of procedure to make a financial success in my work.

About three years ago I located here with the best equipped office in town, and a diploma from one of the leading eastern dental colleges. The town claims seven thousand, with the rural districts, and was supporting four dentists on my arrival. It is an agricultural community with a few industries of not much importance, as far as the size of the payroll is concerned.

On my arrival, I called on some of the resident dentists and obtained their prices, at least I thought I did, but after a period of eight to twelve months, I came to the conclusion that they had been double-crossing me and were charging much less than they had given me to understand. They were never friendly, and did not return my calls until long after I had located, and some of them not even to this day. I had no means of knowing what they were charging until one day in course of conversation with a patient, the light was borne in on me.

I was informed that I was the highest priced dentist in town, and although the people had no complaint with my work, still they could get their dental work done much cheaper by the other dentists. My competitors in the meantime had an excellent chance to raise on their own prices, but did not do so. Since locating, I have not received \$25 worth of business from them. The little I have received has come from one man, and he is not a college graduate, and therefore is not expected to have the ethical spirit very highly developed.

I had now been located over a year when along comes an advertiser, a graduate of one of Chicago's leading dental colleges. He immediately started to load the mails with circulars, carried large ads in the local paper, and made extravagant guarantees with lower prices than any of my former competitors. I had been reading Brother Bill's Letters a year, and decided to continue with the title of the "highest priced dentist in town," which had been thrust upon me by my well-wishing brothers. Why not fight it out along this line, since lower prices than the advertiser would be ruinous, unless I hoped to do a lot of business; this seemed out of the question unless I got it the same way as he did.

For two years now I have consistently charged just a little more than the others. I have never allowed a patient to leave my chair without advocating high-class professional services at advanced prices.

Sometimes I have won, but more often I have lost business, as I afterwards ascertained.

The people here have been getting dental services cheap, and they can't be blamed for going where they can continue doing so.

Now here is the situation after three years conscientious striving to make a living: The advertiser is making money, has an extra chair in his office, presided over by a licensed dentist. He has cut down his advertising expense to Moving Picture Shows only. Soon he can afford to be strictly ethical and join the State Dental Association.

My case summed up briefly is this: I have never paid expenses since I located, and my cash reserve is about gone. If you can give me any advice I shall esteem it a great favor.

Sincerely yours,

H. C. R.

Editor DENTAL DIGEST:

IN answer to E. P. M. in October DIGEST (page 583), will say that he has my heartfelt sympathy.

The first nine months I practised, my gross receipts were only \$613.70. I couldn't stand it any longer so had to do something, and at that time I was ready to do something desperate.

Don't see how our friend has stood the strain ten years. He says he won't believe anyone that says they did \$2,500 the first year they practised. I will give some figures up to the time I sold half interest to another doctor.

I first opened a new office in a town of 2,500 people and good surrounding country. It was my home town, and I had lots of acquaintances, but competition was too strong. There was an advertising office a couple of doors from me that had a good practice and was run by a good dentist, who did good honest work and gave his patients what they paid for. Now I had to do something. I already owed for my furniture, and this advertising man wanted to sell on account of his health. I bought him out, and on credit, too, so I owed by this time about \$1,000. I contracted to pay him a certain amount each month, and did so without any trouble. I had a contract with him in which he was to stay with me for three months. The expenses were to be taken out of the gross receipts, and I was to receive 40 per cent. of the balance, which was \$397.91 for the three months. That ended the first year of my practice, \$613.70 first nine months gross receipts, and \$397.91 last

three months net receipts. Then I took full charge, and for seven months practised alone. My gross receipts for the seven months were \$1,595. Net, \$1,060.06. At the end of this time I took a partner, and so far as business is concerned we are doing very nicely. We have about eliminated the advertising and have raised our fees on some classes of work. Our fees are not high, but are as follows: Gold shell crowns \$5 to \$6. Vulcanite plates each \$10. Aluminum, \$20. Davis or Twentieth Century crowns, \$5.00; Richmond crowns, \$5.00 to \$7.00; bridge work, \$5.00 per tooth; gold fillings, \$2.00 to \$3.50 (when a tooth is so bad that we have to charge more, we crown it); silver fillings, \$1.00; treating and silver filling, \$2.50; cleaning, \$1.00; extracting with local anesthetic, 50 cents; \$1.00 extra for treating a tooth to be crowned. Our terms are spot cash for friend or foe.

Now I am not competent to give our friend advice as to the best thing to do, for I don't know his personality, but had I not bought this office I was going to fix up a road outfit and pick out four good little country towns, make the circuit, and work them all together. My partner does this about one half of his time and makes good money. Then it also makes a good feeder into the office.

Our friend says farmers won't pay but 50 cents for a silver filling. We do a great deal of work for the farmers and have no trouble getting \$1.00 for silver fillings. They sometimes want to bargain with us, but they always have the long green and don't say, "do you work on the installment plan?" I presume some dentists get mad if anyone tries to bargain with them, but we don't. We will reason with them, and perhaps we decide on another method for the work that will be satisfactory to them. I was figuring last night with a man to raise his bite. One way I told him would cost him \$75.00 and another \$60.00. Of course he wanted the \$60.00 method. One will be about the same profit to us as the other.

Our friend wants to know if he would be worth more to another dentist than to himself? In answer to that it seems from his record of ten years, that he is a failure as a business getter. If he could form a partnership with some one who knows how to build a practice, even if he had to take the heavy end for a while, there would be more in it to him in dollars and cents, and that is what we need to pay the groceryman. According to his figures, he don't make as much as bartenders, barbers, or grocery clerks, and he is not even in a class with skilled mechanics, some of whom I know make \$3.00 and \$4.00 per day and have no office expenses whatever. He says you can't teach old dogs new tricks. Perhaps you can't, but old men can learn new tricks. I know, for I was thirty years old when I began the study of dentistry, and I

believe I have learned quite a lot. I made \$80 to \$100 a month at my old trade, and if I get so I don't do so well at dentistry, I won't hesitate long before I go back to it.

I want to get them honestly, but will tell you on the quiet, the dollars are what I want, and if I can't make good in dentistry, I will quit.

If I decide that I am a round peg in a square hole, then I will hunt a round hole.

W. W.

To Brother Bill:

I am a reader of the DENTAL DIGEST and give it credit for trying to keep up prices. Don't you know that everything is going up but dental fees? Here's why:

Case I.—A woman came to my office to have some dental work done—asked for a price on a four-tooth bridge. My price was \$40.00. She told me she could have it done for \$25.00 at Dr. F.'s, and he would guarantee his work. I told her to go there, and she did. This man has been in business thirteen years and it is a fine way to keep up prices. (Remember I explained until I was sick of it regarding her work.)

Case II.—A patient came to my office for the extraction of four teeth—said her dentist was afraid to pull same. I told her that if she wanted a plate I would extract the teeth and make a plate, including four gold fillings for \$26.00. She said "go ahead." When I had the teeth extracted she went back to Dr. H. and he made a plate including four gold fillings for \$15.00. How's this for keeping up prices?

Case III.—Another patient came to see me from Dr. H. with a very sore tooth under a bridge. I took off bridge and cured tooth and bridge was mislaid. Later she changed from me to Dr. B., and I understand he told her not to pay me until I gave her back the bridge.

I tell you we have some fine men in our profession. Good alumni men, too.

I would like to have an answer to this.

H. B.

Editor DENTAL DIGEST:

IN reply to "W. A. K." in your December issue wish to say that the sealing of Formocresol in a tooth, the nerve of which is partly alive, does not necessarily mean pain to that tooth. I have had cases of this kind and found that sealing a small quantity of arsenic directly in the canal for 24 to 48 hours will give you an opportunity to clean out the root canal. You will usually find the upper portion of the nerve with the appearance of putrescence and the lower portion with blood vessels intact.

G. W. B.



PRACTICAL HINTS

[This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to him.]*

A DEVICE FOR POLISHING GOLD INLAYS.—In cases, except where the inlay is very small, by using a crown remover of Dalton type, an inlay can very quickly be polished, by placing teeth-like projections to inlay and turning screw till inlay is securely held; it may then be placed on buffer, etc., without fear of losing.—E. P. ERMANN, D.D.S., WARWICK, N. Y.

FITTING PORCELAIN MOLAR CROWN.†—We frequently find first permanent molars, either superior or inferior, that are so badly broken down that it is practically impossible to fit a shell crown with any degree of satisfaction.

My manner of procedure is to put them in a healthy condition and fill the nerve canals, and if the gums overlap I place a pledget of cotton saturated with sandarac varnish and crowd the overlapping gums out of the way. I leave it there for twenty-four hours. Then with a carborundum stone and burs I trim the ragged edges all smooth and remove all decayed particles that can be removed. I enlarge the nerve canals for receiving pins, so that they will draw properly. I next take a bite impression tray and warm up enough modeling compound to fill the tray, take a piece about the size of a filbert and crowd well down into the depression to cover the roots thoroughly and well; then, with that which is on the impression tray, take the bite and remove it all very carefully. Then the pits of the holes which were bored for the pins will show in the modeling compound. I then mount that on the articulator, remove the wax, and the depressions will show where the pin holes are in the model. Then with the same drill carry those as deep as they are in the roots of the tooth. Then take a Twentieth Century

*In order to make this department as live, entertaining and helpful as possible, questions and answers, as well as hints of a practical nature, are solicited.

† Given as a clinic at the Southwestern Michigan Dental Society, 1911.

or any anatomical mould tooth of the proper shade and size and grind the buccal wall to fit as accurately as you can. Next, take iridio-platinum wire or platinoid wire for posts and insert them in the holes in the roots of the tooth; then, with your inlay wax thoroughly warm, press over the pins. Take your crown and crowd down over that and close your articulator and adjust your articulation so that it occludes properly, and trim off the margins just as you would like to have it for a completed job for casting. At this point, if you wish to, you can try it in the patient's mouth to prove up. Then invest and cast as you would an ordinary inlay, either with gold, Weston's metal or acelite. It makes one of the most sanitary and complete restorations that I know of. You can cast gold direct on to a T. C. tooth.—A. C. RUNYAN, D.D.S., SOUTH HAVEN, MICH., *Dental Summary*.

TO CORRECT A MISFITTING PLATE.—The cause of the misfit being a lack of proper adaptation of the plate to the posterior part of the palate. This is the most common cause for misfitting plates.

In those that have been worn a long time this is usually brought about by the absorption of the ridges, allowing the plate to bind on the hard center of the palate, preventing a correct adaptation at the posterior margin. First, mark on the plate the outline of the hard center, then with a stone in the engine grind a relief. On the principle of scraping a relief in an impression.

The posterior margin of the plate should rest on yielding, soft tissue, so that the edge of the plate may imbed itself into it.

To establish the proper length of a plate. If it is too long, file it off until it is too short. Then treat the same as plates that have been made too short, as follows: Dry the plate, then with a stick of Detroit Modeling Compound softened over a spirit lamp add, across the posterior part of the lingual surface of the plate, a line of compound about a quarter of an inch thick. Place the plate in the mouth and hold firmly in position.

With a wet finger push the softened compound back until it encroaches upon the soft palate the full width of the plate and around the tuberosities. Chill it by holding a wet cotton roll against the compound. Remove and again soften the compound over the lamp and again place in position—and ask the patient to swallow quickly.

If the compound is sufficiently softened it will be turned down by the soft palate to the point of its attachment to the hard palate. Cut off the compound at the point where it is turned down. Repeat until the soft palate has no effect on the softened compound—this should be the exact length of the plate.

Chill thoroughly, then add on a line compound about an eighth of an inch in width and thickness across the extreme edge of the palatal surface. Soften evenly, and as it begins to set return the plate to the mouth, and hold firmly in position until the compound sets. Chill as before described. If the compound has not been too soft the hard tissues will push it down and the soft tissues will be pushed up by it. Remove the plate, chill thoroughly and return to mouth. If the technique has been properly followed the plate should stay very firmly in position. Make a plaster model of the plate thus prepared, remove the compound, replace by a wax of the proper thickness, then by the ordinary repair method make a rubber addition to the plate to replace the wax.—R. E. DENNEY, *The Dental Alumni Annual of University of Pennsylvania*.

Question.—As a subscriber to THE DENTAL DIGEST, I ask advice in regard to the removal of a very small plectet of cotton which has become lodged in the root (about halfway down) of a lower first bicuspid. Have tried barbed broaches in all shapes and forms, but they do not catch hold. Have also tried a 40 per cent. solution of sulphuric acid, which was sealed in the tooth for twenty-four hours, but apparently it has no effect. This tooth is to be used for an abutment for a bridge, and I must make every effort to save it.

What advice can you give me for the removal of this cotton, or if it cannot be removed what could I seal in the teeth to prevent the disintegration of the cotton, and thereby prevent a future abscess?—A. M. D.

Answer.—I do not believe that there is any agent which sealed into the tooth will disintegrate cotton in canal. Sulphuric acid, 40 or 50 per cent. would probably penetrate as far as anything, but would only char the surface, unless continually agitated with broach, as canals constricted by secondary dentine are enlarged. A good way is to cut a good broach off, leaving a couple of barbs with a short end projecting, which should be ground to a sharp point. A broach thus shortened and sharpened and secured firmly in a holder can be forced with considerable pressure into the cotton, rotated enough to engage some fibers in the barbs and dressing removed, where an ordinary new broach would be too flexible. If this fails, sharp twist broaches (such as Kerr or Downie), carefully and patiently manipulated, should work it out in time.

If, however, you cannot get all of old dressing out, I would advise sealing in an application of formocresol for several hours, after which remove, dry canal, and seal thoroughly above cotton, that same may not become infected from the oral cavity.—V. C. S.



THE RESTORATION OF NORMAL OCCLUSION BY THE GENERAL PRACTITIONER*

By J. LOWE YOUNG, D.D.S., NEW YORK CITY

NORMAL occlusion of the teeth is not a new idea, but previous to the writings of Dr. Edward H. Angle on the correction of malocclusion, the necessity of restoring normal occlusion as a result of orthodontic treatment was not known by the dental profession. This was the thought which was the basis of the classification and diagnosis of malocclusion, and which immediately placed orthodontia upon a scientific foundation, enabling it to advance with such rapid strides during the last ten years.

Now, in order for the orthodontist to correct malocclusion, he must of necessity have a clear and definite understanding of this ideal condition which he is attempting to restore. Thus it is that normal occlusion is the one supreme picture which the orthodontist has in his mind, the beginning and the end of his anticipations of treatment, the guide which governs the daily progress of correction of malocclusion, the standard in occlusal relations which, above all, it is desirable to obtain.

Examined analytically, this condition of normal occlusion exhibits first, normal structure of the teeth, collectively and individually, and second, normal function of the teeth, collectively and individually. Normal structure of the teeth will imply the perfection of form of the individual teeth and of each dental arch. Normal function will imply the normal occlusal relations of the inclined planes of the cusps of the individual teeth.

With this conception of normal occlusion it will be apparent that the loss of one tooth or even one cusp of one tooth, or to be more exact, the loss of any portion of the mesio-distal diameter, will to just that degree destroy both normal structure and normal function. It is also, apparent to those who have seriously studied this question that it is of equal importance to properly restore the mesio-distal diameters of the deciduous molars where fillings have to be inserted on their proximate surfaces.†

* Read before the American Academy of Dental Science, Boston, Mass., April 3, 1912.

† The italics are ours.

Did it ever occur to you that the orthodontist often works for years to build up this normal occlusion only to have it pulled down in a day by the ruthless extraction of a single tooth, or by the lack of restoration, by the general practitioner, of cusp contour, or proximate contact in making fillings or inlays?

It would seem, therefore, that the dentist must share the responsibility of the orthodontist in emphasizing the importance of normal occlusion by preserving it at all times and at least by not destroying it.

Hence, if the general practitioner is to properly restore any part of the dental apparatus, he, like the orthodontist, must have in his mind's eye the forms, surfaces, and positions of the dental organs when normal.

The value of proximate contact, the proper occlusion of each cusp, the size of each fossa, and the direction of each sulcus, should be known to him who aspires to restore or recreate these anatomical forms.

In this brief paper it is my purpose to call your attention especially to the one phase of normal occlusion represented in the relation of the occluding surfaces of the teeth of one dental arch to the same surfaces of the teeth of the opposing arch.

At the same time I wish to appeal to you to use the same standard of normal occlusion as a guide in your work that the orthodontist uses, so that when you examine a set of plaster models made from accurate plaster impressions you will not only consider the teeth of one arch in their mesio-distal and bucco-lingual relation to those of the opposing arch, but that you will note the position of each cusp of each tooth and its relation to the cusps of the teeth of the opposing arch. For, when carefully considered and thoroughly understood, their proper reproduction becomes of the utmost importance to the general practitioner and the prosthodontist, as well as to the orthodontist.

It is my further purpose to direct your particular attention to the grooves, the pits, the ridges, and the inclines found on the occluding surfaces of the teeth, and to consider the possibilities of their reproduction in your work. These features can be best studied from the natural teeth wherever it is possible to procure a skull having all the teeth in normal occlusion.

Those of you who purpose to seriously study these organs will do well to have Dr. Black's "Dental Anatomy" along with your anatomical specimens. It is really wonderful how carefully each anatomical landmark is defined by this writer. To attempt to go into details, as he has done in describing the occlusal surface of each tooth, would make this paper too long, but it is deemed advisable to quote from his Fourth Edition what he says of this surface of the lower first molar.

This tooth has been chosen because of its great importance to the orthodontist in his work. (Here follows a description of the tooth.)

The deficiency of these fillings and inlays to which I refer, is due entirely to the failure of the operator to reproduce the fossæ, sulci, grooves, ridges, and the mesio-distal diameter as they are found in the natural teeth.

That it is Nature's plan to have cusps of a proper length and fossæ of a proper depth, and sulci of a certain form, and ridges of a definite shape in order to make the dental apparatus efficient, a careful study of these occlusal surfaces in their natural state will show conclusive proof. (See Fig. 1.)

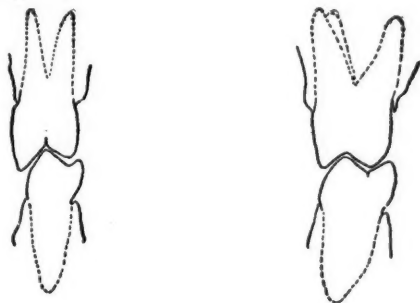


Fig. 1.

Here, let us note, that the bottoms of the grooves when normal are never reached by the cusps of the teeth of the opposing jaw. In this respect the old-fashioned millstones were patterned after the grinding surfaces of the teeth, and whenever the miller allowed these stones to become dull, so that the grooves were very much reduced in depth, though not entirely obliterated, the grist was invariably spoiled. In like manner, whenever the dentist fails to reproduce the grooves, pits, and ridges in restoring lost portions of the occluding surfaces of the dental organs, does he not interfere with their efficiency for masticating food? (See Fig. 1.)

Now, with this idea of the normal occlusal surface in mind, let us, by way of contrast, consider the meager, inefficient manner in which the average practitioner attempts to reproduce them, and see how far short he falls from the ideal in this respect.

By studying the models of this case you will see by examining and comparing the occluding surfaces of the teeth before and after the inlays were inserted how lacking are the fossæ, sulci, grooves, pits, and

ridges in these otherwise beautiful inlays. You will observe almost flat surfaces and in many cases overcontour on the occluding surfaces. In several places the cusp of a tooth in one jaw strikes too hard on the inlay in the opposing jaw. Indeed, it is a wonder that more teeth are not split where fillings and inlays are left in such a condition. (See Figs. 2, 3.)

These inlays were made by as conscientious an operator as I have ever known. I am satisfied that he would do just such work as this for his own child and feel proud of it. The child complained of not being able to masticate food as well as she formerly could. I have seen plaster models of many cases, though less marked, showing these same defects.

The question then naturally arises, how to reproduce these anatomical landmarks found on the occluding surfaces of the teeth so as not to interfere with their efficiency when restoring portions, or all, of their occluding surfaces.

Previous to the introduction of cast gold inlays it seemed almost impossible, and very improbable, that this would ever be done. With the perfection of this process it appears to be quite within the range of the careful, conscientious operator to so reproduce each anatomical landmark in restoring any, or all, of the occlusal surface of a tooth, that detection of these restorations will be almost impossible when examining plaster models made from accurate plaster impressions of such teeth.

In this way the inlay was so held that it was possible to smooth and polish the grooves and pits where they had been properly reproduced in the wax, and where not, it was found possible to cut them in the inlay. Steel engravers of various shapes were used in doing this, for by their use sharp grooves such as are found in the natural teeth can be cut in the gold, and if properly done these grooves will require very little burnishing and polishing to make them perfectly smooth. The inlay was then warmed so as to remove it from the metal die, and the wax was cleaned off with chloroform. A needle-point flame of a small blowpipe was used in warming the inlay, being most careful not to heat the amalgam die, which would cause the mercury to escape and be absorbed by the hot gold.

Where the direct method is used the inlay can be fastened direct with Bottom wax, care being exerted to have all thin edges of gold well supported with wax, so that the shape of the inlay will not be changed by using the steel engraver.

There is no doubt that it is more difficult to properly reproduce the anatomical shape where the inlay is mounted in the wax alone than



Fig. 2.

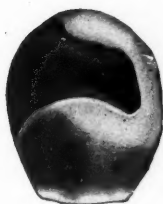


Fig. 4.



Fig. 6.

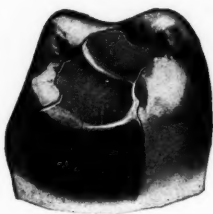


Fig. 3.

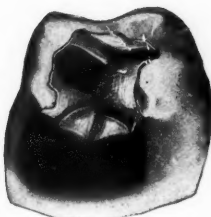


Fig. 5.

where it is set in a metal die of the tooth. But with a little care, in either case it is possible to reproduce these grooves.

Since writing the above it has been found that it is quite practical to reproduce every minute anatomical landmark of the occlusal surface of a tooth in wax and so cast the same that the use of steel engravers will not be required at all. (See Figs. 4, 5.)

The inlays that will now be shown were made by request, in duplicate, by some well-known operators. It is not the intention to criticise these, other than where they are deficient on the occluding surface. The first inlay of each case was finished by the operator who made it as if he were going to cement it in the tooth. The second one was left as it was cast. These have been treated as described above, so that you may compare them.

In some of these you will observe that it was necessary to add to them with gold solder, so that the ridges and grooves could be reproduced to conform to the anatomy of the teeth.

The full bicuspid was carved by a laboratory man, and is his first attempt at such work. By comparing this with the plaster models that were given him to copy, it will be seen how possible it is to reproduce their anatomical shape. (See Fig. 6.)

One of the great difficulties experienced by the orthodontist is to retain the mesio-distal relation after it has been established. Very frequently this trouble is due to improper fillings, or inlays, on the occluding surfaces of the teeth, particularly those of the lower first molars. If these restorations can be made so as to accurately reproduce the original shapes of these teeth, and thus permit the large mesio-lingual cusp of the upper first molar to properly seat itself each time the teeth are closed, do you not see what a powerful influence is exerted by the action of the incline planes of this cusp on the incline planes of the five cusps of the lower first molar to prevent a return to a mesial or distal malocclusion, and do you not see that to a proportionate degree each reproduction of the normal occlusal surface of a tooth exerts a like helpful influence? Where all restorations accurately reproduce the original anatomical landmarks, the orthodontist will experience much less difficulty in the retention of these cases.

Granting, then, that these occlusal restorations are possible, does it not appeal to you that they are necessary from the standpoint of beauty, perfection of anatomical contour, and especially of efficiency?

In presenting to you the keen appreciation by the orthodontist of the importance of normal occlusion, it is with the hope of arousing a like appreciation in the dentist, so that in all his efforts at restoration of the lost parts of the dental apparatus he will be inspired to accu-

rately reproduce, in the minutest detail, their anatomical shape. If I have succeeded in doing this I shall feel well repaid and will look forward with keen interest to a heartier coöperation between the dentist and the orthodontist in the attainment of normal occlusion.—*Journal of the Allied Societies.*

THE PROBLEM OF THE CONSTRUCTION OF GOOD DENTURES*

BY J. H. PROTHERO, D.D.S., CHICAGO, ILL.

THOSE members of the State Society who have been in regular attendance for a number of years past will recall that at each session with almost unfailing regularity the preceding essayist, Dr. Pritchett, has been a more or less active and always an interested as well as an interesting worker.

Many will also recall that in the interval between clinics and papers and business meetings he would frequently buttonhole a friend, take him to some secluded spot in the hotel lobby or meeting place and engage in a heart-to-heart talk.

Frequently this talk would be prefaced by the doctor producing several small tin boxes, each containing portions of meat that had been ground, reduced, Fletcherized, crushing illustrations, he might have said, of what his patients were able to accomplish with dentures made to cut and shear and grind.

Although some looked on this fad as a joke, others regarded it seriously and considered thoughtfully the lesson presented.

There may have been times when the doctor must have felt that his efforts were unappreciated and that no progress was being made. Unconsciously and without realizing it he has been laying the foundation deep and wide for better methods in denture construction by showing the results of scientific procedures.

Dr. Pritchett has been doing splendid missionary work these many years, the results of which are beginning to be felt noticeably in the requirements demanded of candidates for State Board licenses. If any doubt exists in the minds of anyone on this point let him visit the clinical prosthetic section at the next meeting of the board and the doubt will be dispelled.

* Read before the Illinois State Dental Society, May, 1911.

In Henry VanDyke's little story, "The Other Wise Man," Artaban the Median invites his eight other friends, high priests of the order of Zoroaster of fire worshipers to accompany him on a journey in search of the Prince worthy to be served by all men. One in reply to his invitation says, "My son, it may be that the light of truth is in this sign that has appeared in the sky and then it will surely lead to the Prince and the Mighty Brightness. Or it may be that it is only a shadow of the light as Tigranes has said and then he who follows it will have only a long pilgrimage and an empty search, but it is better to follow even the shadow of the best than to remain content with the worst, and those who would see wonderful things must often be ready to travel alone."

The high priests in Prosthetic Dentistry who have been looking for wonderful things have been traveling alone for many years, cheered, however, from time to time, by a shadow of the light. Evans, Bonwill, Walker, Schwartz, Chistensen, Gysi and in our own state Pritchett, each in his own way either by inventive genius, ability to devise methods, or put into execution ideas of others, deserve the heartfelt gratitude of the profession for their efforts.

I take this opportunity to publicly acknowledge my gratitude to Dr. Pritchett for having encouraged me more than twenty years ago to strive for higher ideals in the prosthetic field, and I cherish the hope that for many years to come our annual meetings may be graced by his presence and the seekers after knowledge may listen to such enthusiastic words of truth as he has so ably presented to-day.

The story of good denture construction is a long one when all the details are told, too long for one evening's entertainment or for two men to outline. Your essayist will therefore call attention to certain important steps that in his opinion should be emphasized, in other words hit a few of the high places, leaving the general routine of details to be obtained from journal articles that have appeared from time to time in the last few years.

It is a deplorable fact that very few dentures are constructed so as to grind and reduce food substances with anything like the same thoroughness that is possible with the normal human masticatory apparatus. The average denture of to-day is capable of occasionally puncturing morsels of food, but is practically useless as far as grinding is concerned. This is due to the fact that only occlusal conditions are considered and worked out, usually very imperfectly at that, for few attempts to modify the occlusal forms of artificial teeth and fewer still to modify the cusp so as to permit the anatomical movements to be performed.

The force required to crush food between teeth with well-developed occlusal surfaces when the hinge motion is made use of is much greater than if the lateral movement is employed.

A comparison of the results of grinding versus crushing force is found in Dr. Head's article in the *Dental Cosmos*, December, 1906. Here he makes use of the findings of Dr. Black's phagodynamometer as furnishing a fair test of the force required to crush food by direct thrust and compares these results with experiments conducted with a human masticatory apparatus in which the food was subjected to the grinding motion.

The following is the table referred to:

Meats.	Head.	Black.
Corned beef	18-22	30-35
Tongue	1-2	3-5
Tenderloin of beef, very tender.....	8-9	35-40
Round of beefsteak, tough.....	38-42	60-80
Roast beef	20-35	35-50
Boiled ham	10-14	40-60
Pork chop	25-30	20-25
Roast veal	16	35-40
Average	17-20	32½-41½
Vegetables.		
Raw cabbage	16	40-60
Head lettuce	8	25-30
Radish, whole break at.....	20-25	20-25
Radish, pieces pulverized at.....	10-15	35-40
Average	12½-16	30-38½

Is any further argument necessary to convince the prosthetist that the greatest usefulness with the least expenditure of force is developed in teeth occluded anatomically. If so as an additional argument let it be borne in mind that anatomically arranged teeth balance. In other words, there is no idle side, for while food is being reduced and ground on one side the dentures on the opposite side are supporting each other in smooth gliding contact. System in that, isn't there? Might as well expect an eight-wheel ordinary locomotive to run on a mono-rail and maintain its equilibrium as that unbalanced dentures will remain seated under active lateral masticatory effort.

Method of manipulation for upper impressions is as follows: Select

a tray of appropriate size, but long enough to cover all of the hard palate if possible. Place compound and introduce in mouth, pressing well up to position. Conform to labial and buccal surfaces of border by external pressure. In most cases pass the middle fingers of both hands back in central palatine vault and lift the compound in this location up against the soft palate, holding the material in position until fairly well hardened (the tray being held with the index fingers). Remove and chill. The impression will come away easily, as the adaptation is not yet developed. Trim off excessive surplus, round away the angles resulting from the cutting and remove all chip débris.

Now invert over a small gas or alcohol flame and soften the impressed surfaces to the depth of 1 to $1\frac{1}{2}$ mm. and quickly return to the mouth. The chair should be tipped back so that the operator can stand directly behind the patient and when the impression is again seated a firm steady pressure of from 15 to 30 pounds is maintained upon the tray for three or four minutes to bring about a readjustment of the softened film of compound. Under the pressure the compound moves from the hard to the softer areas, in fact it is crowded onto and compresses them.

On removal the impression is again chilled and reheated if necessary and the process repeated. Patients frequently complain bitterly of the discomfort experienced in removal of the impression, which, in some few cases observed, owing to the almost complete exclusion of air from between the contact surfaces, indicated that nearly a perfect vacuum had been produced. Lower impressions are treated in a similar manner, but on account of the decreased area involved, less effort will be required for dislodgment than in upper cases.

Upper impressions should be relieved in the central palatine portion to a slight extent, say $\frac{1}{2}$ mm. for even with the compression of soft tissues carried out in the impression, under use, the denture is inclined in time to settle and rock.

In lower cases the deepest part of the impression or that portion which reproduces the crest of the ridge is sometimes slightly scraped from about the region of the second molar to the corresponding tooth on the opposite side. By so treating these cases the crest of the border is not impinged on when the lower denture is under load and in addition this treatment permits the peripheral margins of the denture to settle firmly into and against the soft tissues, thereby excluding the air. In many cases a partial vacuum is developed which materially adds to the stability.

A few words on models will be applicable at this time. All plasters, good, bad and indifferent, expand in setting, some more, others less, all

variable, depending on conditions and how manipulated. Moderately coarse plaster, medium setting as to time, good hardness when set, is preferable to the finely ground quick setting varieties for model work because of less expansion.

A moderately thick mix should be made, the mass stirred slightly and introduced into the impression as quickly as possible. As soon as hard enough to handle, remove the tray and impression to prevent warpage.

Trim the labial and buccal surfaces somewhat inside of peripheral outline with a discoid instrument to a very slight depth to compensate for general expansion. This trimming raises an imperceptible bead on these surfaces and if properly located will not be obliterated by subsequent peripheral trimming frequently necessary to relieve irritation. A plane should be scraped across the distal part of the model, usually about one-eighth inch wide and meeting the buccal beads at the tuberosities. This area should be tapered from nothing anteriorly to $\frac{1}{2}$ mm. in depth at the distal margin and forms at this point the line or distal termination for the denture.

The beading on the sides of the model compensates for general expansion of the plaster, the line across the distal insures the base plate being imbedded in the tissues and guards against the ingress of air in this most vulnerable area.

The construction of base plates on which to build rims of wax for determining facial contour, length of teeth and for bite purposes, locating the condyle ends, taking the bite, use of the face bow, and mounting the models on the frame have been well described in previously published articles and it is not necessary to take up your time by such repetition. Clinics will be given to make the various steps clear when at the same time the registering of the condyle path will be explained.—*The Dental Review*.

(This article is expected to be continued in the February number.)

THE DAY OF YOUR DEATH

Nor long ago, in a Western town, I was invited by a district judge to sit on the bench with him and listen to the evidence in a certain case that he was sure would interest me.

It was a divorce suit, and everything had been conceded except the question of alimony. In determining this, the value of certain property held by the parties jointly was under consideration.

The Northampton Tables of Mortality had been cited as authority. To back up these tables an insurance actuary had been called in. Sure enough, the evidence of this actuary struck a cosmic chord in my consciousness.

In the preliminary examination, to show his fitness as an expert witness, the actuary was asked this question:

"Can you make a close estimate on the average length of human life?"

And the answer was, "Yes, if numbers are taken into consideration."

"Can you tell the probable length of the life of an individual?"

And the answer was, "No."

When asked why, the witness said, "The element of chance enters into single lives, and where large numbers are considered chance is eliminated, so we get the law of average."

The next question was, "But suppose we bar the element of accident, can you then tell how long an individual will live?"

And the answer was, "No."

Being pressed for a reason, the actuary expressed himself in a little speech that impressed everyone in the court room. I cannot recall the exact words, but the gist of it was as follows:

HOW LONG DO YOU EXPECT TO LIVE?

There is an element in longevity that cannot be ascertained or passed upon by anyone except the man himself.

My opinion is that every man should be his own physician, and he should be wise enough and sane enough to make a diagnosis of his own case—spiritually, mentally, physically—much closer than anyone else ever possibly could.

The one thing in human life that no one but the man himself knows is, how long does he expect to live?

It is a pretty good general rule that, barring accident, the man will live as long as he expects to, or, if you please, as long as he wants to, or hopes to.

Many people are obsessed with the fallacy that the age of man is fixed at the limit of threescore and ten; and so, with a vast number of people, when they are around sixty-five they begin to prepare to shuffle off. They quit business, retire from active work, close up their affairs, and when they do these things, death and dissolution are at the door. There are other men who work on until they are eighty,

and then they do exactly what the other man did at seventy, with a like result.

Great numbers of very strong, active, earnest men reach the age of eighty and die at eighty-two, eighty-three, eighty-four. And the reason for this passing is not so much a physical one as it is a mental. These men have fixed this age limit in their minds, and their entire life and death conform to the idea.

WHY NOT BE A CENTENARIAN ?

As a general proposition I would say the way to live to be one hundred is not to consider the question of time, but simply to continue an active, earnest interest in human affairs and not overeat.

The individual who looks for ease and rest and bodily gratification, be he young or old, is in a dangerous position. To eliminate the toxins which accrue in the human body, activity is positively necessary. The activity of the mind reacts on the organs of the body. So thought is a physical process, and to gain this elimination which assures health, no man should ever think of retiring from business and quitting the game.

If you retire from one thing you must take up something else that is more difficult.

Change of occupation is a great factor in human health; but the one thing that makes a man live long is an earnest vow early in life, well kept, to "never say die!"

Only such a one can make a century run, and the death of the centenarian is almost without exception a painless process.

And no physical examination can probe these inner facts and attitude of the man's mind.

The individual himself knows and can determine how long he will live better than anyone else possibly can; and I believe he can himself, if he is honest with himself, size up his case, and, barring accidents, figure the day of his death, as Moses did on Mount Horeb.—*The Fra.*

A WOMAN is usually suspicious of a low priced dressmaker and a man of any low priced workman, but when selecting a dentist the masses do not use the same reasoning ability but select one who hurts least, charges less or has a pleasing personality irrespective of all other qualifications a D. D. S. is supposed to have.—F. U. EMLEY, D.D.S., *American Dental Journal.*

SOCIETY AND OTHER NOTES

Officers of Societies are invited to make announcements here of meetings and other events of interest.

IDAHO.

The Idaho State Dental Board will meet for examination January 6, 1913, in Boise.—ALBERT A. JESSUP, *Secretary*.

INDIANA.

The Fifty-fifth Annual Session of the Indiana State Dental Association will be held at the Claypool Hotel, Indianapolis, May 20, 21, 22, 1913.—OTTO U. KING, *Secretary*.

MINNESOTA.

The annual midwinter meeting of the Minneapolis Dental Society will be held in the Masonic Temple, Minneapolis, Minn., on Friday and Saturday, January 17 and 18, 1913.—O. DEFOREST DAVIS, 404 Donaldson Bldg., Minneapolis, Minn., *Secretary*.

NORTH DAKOTA.

The next meeting of the North Dakota Board of Dental Examiners will be held in Bismarck, North Dakota, January 14, 1913, and continue four days. All applications must be made to the Secretary by January 4, 1913.—F. A. BRICKER, *Secretary*.

PENNSYLVANIA.

The next annual meeting of the Institute of Dental Pedagogics will be held in Pittsburgh, Pa., January 28-30, 1913. An unusually interesting program has been arranged and no progressive dental teacher can afford to miss this meeting.—FRED. W. GETTHRO, *Secretary*.

NEW YORK.

The Forty-fifth Annual Meeting of the Dental Society of the State of New York will be held at Albany, N. Y., Thursday, Friday, and Saturday, May 8, 9, and 10, 1913.—A. P. BURKHART, *Secretary*.

SOUTH DAKOTA.

The South Dakota Board of Dental Examiners will hold its next meeting at Sioux Falls, S. D., January 14, 1913, at 1.30 P.M., continuing three days. For further information address ARIS L. REVELL, Lead, S. D., *Secretary*.

WISCONSIN.

The Seventh Annual Meeting of the Alumni Society Dental Department Marquette University will be held at the Milwaukee Auditorium, January 23 and 24, 1913, to which all ethical dentists are invited.—C. T. ROSENBAUM, *Secretary*.